Public Health Reports

Treasury Department, United States Marine-Hospital Service. Published in accordance with act of Congress approved February 15, 1893.

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UNITED STATES.

[Reports to the Supervising Surgeon-General, United States Marine-Hospital Service.]

Influenza (la grippe).

This disease is reported by newspapers present in epidemic form in many places. In Philadelphia it is stated that 20 per cent of the school children have the disease. It is also reported as attacking many persons in New York, Washington, and of other cities. The health officials of New York and Philadelphia have taken the ground that la grippe is contagious, and recommend isolation of persons suffering with the disease, fumigation of rooms, and public vehicles—in a word, the usual precautions observed in the treatment of infectious and contagious diseases. As in the pandemic of 1889–90, la grippe seems to have started in the East, having been reported in Turkey about the middle of November, and has spread westward, following the established lines of travel.

In another part of this number of the PUBLIC HEALTH REPORTS may be found abstracts from the reports of medical officers of the Marine-Hospital Service and State boards of health.

GRIPPE.

Circular letter addressed to medical officers, acting assistant surgeons, and sanitary inspectors of the Marine-Hospital Service, and secretaries State boards of health.

WASHINGTON, D. C., *December 24, 1898.*

SIR: You are requested to report, as soon as practicable, whether influenza or la grippe is prevalent in your locality, giving the type of

the disease, the mortality (severity), and the treatment, sanitary and medicinal, with full statistics as far as possible.

By direction of Supervising Surgeon-General, U. S. M. H. S.

Respectfully, yours, PRESTON H. BAILBACHE,
Surgeon, U. S. M. H. S.

ABSTRACT OF REPLIES RECEIVED.

Alexandria, Va.—Grippe has been prevalent for about three weeks. It is unusually contagious and generally of catarrhal type, but, except in persons of advanced years, or in neglected cases, it is not severe. Cases of croupous pneumonia with typical bronchopneumonia symptoms are quite frequent and invariably fatal.

Berlin, Md.—Grippe is moderately prevalent in this locality, about 20 persons in a population of 1,500 being affected. It is of mild type, with no mortality.

Boston, Mass.—Grippe is very prevalent in Boston and vicinity, and may be said to be epidemic. The number of cases can not be stated as reports are not required by the board of health except in case of death. Since December 1, 8 deaths have been reported, 7 of which were complicated with other diseases. During the same period, 7 cases have been admitted to the Marine Hospital for treatment and 10 have developed in the wards. The type of the disease in cases seen by myself have been mild. It appears to be mildly contagious.

Brunswick, Ga.—Influenza prevails in this locality in a mild type, with no mortality so far.

Cairo, Ill.—Grippe is prevalent, though not yet epidemic.

Cambridge, Md.—Grippe is generally prevalent in this locality in two distinct types, the neuralgic and the catarrhal. The mortality from the disease has been very slight. In my opinion the disease is of a highly infectious type.

Concord, N. H.—There are very few cases at this date, and no deaths have resulted.

Delaware Breakwater Quarantine, Del.—No influenza or grippe in this locality.

Dubuque, Iowa.—A few cases are reported of what is believed to be epidemic or contagious grippe. All are of a mild form, and the diagnosis is questionable.

Fredericksburg, Va.—No cases discovered in the town or vicinity.

Georgetown, S. C.—A few cases of a mild type have occurred in this city within the past two months.

Jackson, Miss.—A few cases have occurred, but there is no epidemic.

Louisville, Ky.—There has been an extensive epidemic of influenza throughout the State of Kentucky. It has been exceedingly mild in character, no deaths having resulted.

Mobile, Ala.—No cases of epidemic influenza have been reported to the health officer up to this time.

Newbern, N. C.—A few cases have been observed in this city. There have been no deaths. Severe colds and some cases of catarrhal pneumonia are noted.

Philadelphia, Pa.—The total number of deaths for the week ended December 24 was 650, an increase of 169 over the number for the previous week, and 284 over the corresponding week in the preceding year. Of these, 29 were reported as influenza and 123 as pneumonia, being an increase of influenza of 26 and of pneumonia of 47 over the previous week. For the week ended December 29 the total number of deaths is 607, of which 59 are attributed to influenza and 115 to pneumonia. Physicians are generally overworked, and whole families are prostrated. The manifestations of the disease are so varied that it has to be treated symptomatically.

Portsmouth, N. H.—Grippe exists in sporadic form and is of mild type, being generally neuralgic. Catarrh is slight or absent.

Providence, R. I.—A form of epidemic cold exists. Whether it is true epidemic influenza or grippe can not be stated. A few cases which appear to be typical are reported. There has been no perceptible increase of deaths from pulmonary diseases.

Richmond, Va.—A few cases in very mild form.

Rockland, Me.—No genuine cases of grippe. Pneumonia and bronchitis are prevalent.

Springfield, Ill.—There are quite a number of cases of grippe, most of them being of mild type. A few are of the most severe type. Several deaths are reported. Severe colds are prevalent.

Smallpox in Detroit, Mich.

DETROIT, MICH., *January 1, 1899.*

SIR: I have the honor to report 4 cases of smallpox in this city. I would request that 50 vaccine points be sent as soon as possible.

Respectfully, yours, JOHN GODFREY,
Surgeon, U. S. M. H. S.

Smallpox in Minnesota.

ST. PAUL, MINN., *December 19, 1898.*

SIR: It becomes my duty to inform you that John Noberger, aged 27, arrived at Minneapolis, Minn., December 8, 1898, where he developed a mild case of varioloid. Came from Montana where he had been working on the railroads. Supposed origin: One of the railroad crew sick for three days, when taken suddenly from camp and information as to the nature of sickness refused to the rest of the crew.

Very truly, H. M. BRACKEN, *Secretary.*

Smallpox in Oklahoma Territory.

GUTHRIE, OKLA., *December 30, 1898.*

SIR: I have to report the following additional cases of smallpox, all of which exist near the original point of infection, at Stroud: Two

cases near Sac and Fox Agency in country; 1 case at Daggett; 1 case near Parkland in country; 1 case in Chandler. The original cases were of a malignant type, 3 deaths occurring in the first family at Stroud. Total cases to date, 15; total deaths, 3.

Very truly, yours, L. HAYNES BUXTON,
Superintendent of Public Health for Oklahoma.

Smallpox in Pennsylvania.

PHILADELPHIA, PA., *December 31, 1898.*

SIR: Since my last report of December 20, 1898, smallpox has been reported in Pennsylvania as follows: Ball Hill, Bedford County, 1 case; Everett, Bedford County, 3 cases; Charlesville, Bedford County, two families, number not reported; Hopewell, Bedford County, 3 cases; in and near Steeltown, Bedford County, 11 cases; Hustontown, Fulton County, 4 cases; New Grenada, Fulton County, 7 cases; Waterfall, Fulton County, 1 case. The disease is also reported at Libonia, Franklin County, Warfordsburg and Wells Tannery, Fulton County. Diagnosis not yet confirmed. East Vincent Township, Chester County, 1 case; Pittsburg, Allegheny County, 1 case, removed to municipal hospital; origin, Bedford; Homer City, Indiana County, 2 cases. No fatal case has yet occurred.

Yours, very truly, BENJ'N LEE,
Secretary Pennsylvania State Board of Health.

Smallpox in North Carolina.

RALEIGH, N. C., *December 30, 1898.*

SIR: You are hereby informed that 1 case of smallpox has been reported to this office as existing in McDowell, New Hanover, and Tyrrell counties. The origin of the disease is (1) California (?); (2) (?); (3) Norfolk. Precautions taken, as usual.

R. H. LEWIS,
Secretary of State Board of Health of North Carolina.

Smallpox in Biggeville, Ill.

SPRINGFIELD, ILL., *December 30, 1898.*

SIR: I have the honor to report the existence of 8 cases of smallpox in Biggeville, Henderson County, this State. Source of contagion, case previously reported. All patients are quarantined under the direction of this board, and every effort is being made to prevent the spread of the disease.

Very respectfully, J. A. EGAN, M. D.,
Secretary of Illinois State Board of Health.

OHIO.

The smallpox situation.

[Memorandum of cases of smallpox reported from January 1, 1898, to December 22, 1898.—From the Ohio Sanitary Bulletin, November and December, 1898.]

Wapakoneta.—The first case appeared at Wapakoneta May 7, and is traced to an Uncle Tom's Cabin show which appeared there April 26. There have been reported to date 75 cases in Wapakoneta. The following cases have been traced to this outbreak: Vicinity of Wapakoneta,

25 cases, 1 death; Buckland and vicinity, 53 cases; *New Hampshire, 17 cases; Geyers, 11 cases; St. Marys and vicinity, 7 cases; Uniopolis, 1 case; Botkins, 1 case, doubtful; Wayne Township, Auglaize County, 2 cases; West Newton, 5 cases; *Stokes Township, Logan County, 11 cases; *Sandusky, 6 cases; New Paris, 1 case; Dayton, 1 case; *Washington Township, Auglaize County, 2 cases; *Celina, 1 case; *near St. Johns, Auglaize County, 5 cases.

Delphos and Van Wert.—The first cases appeared at Delphos and Van Wert in May. Origin is not positively known, but is suspected to be Uncle Tom's Cabin show, which was at Van Wert April 18 and Delphos April 25; 17 cases appeared at Van Wert, and 17 cases at Delphos and vicinity.

Carroll.—Smallpox appeared at Carroll, Fairfield County, on March 7, in the person of Solomon Smith, who came from Way Cross, Ga., on March 2 and died on March 13. Twelve cases and 1 death at Carroll. One case developed at Columbus, traceable to this outbreak.

Goshen.—Smallpox appeared at Goshen on May 28; traceable to Uncle Tom's Cabin show, which was at Loveland on May 14. In Goshen and vicinity there were 27 cases.

Marysville.—Smallpox appeared at *Marysville May 13, traceable to Uncle Tom's Cabin show, which was there April 29. Thirty-six cases have been investigated, the exact number is not yet known. Five cases at *Amlin, Franklin County, and a number of cases at *Hamilton are traceable to Marysville. The exact number at Hamilton is not yet known.

New Carlisle.—Smallpox appeared at New Carlisle and *vicinity May 10, traceable to Uncle Tom's Cabin show, which was there April 28. Sixty-two cases have been traced to this source; the exact number that developed is not yet known. There has been 1 death.

Loveland.—Smallpox appeared at Loveland the latter part of May, traced to Uncle Tom's Cabin show, which was there from May 1 to 14. In *Loveland and vicinity, 75 cases and 1 death are reported. The exact number that developed is not yet known. Three cases at Center, Montgomery County, and 21 cases at Wyoming are probably traceable to Loveland.

Miscellaneous.—Smallpox has been reported at the following places, origin unknown: *Cleveland, 16 cases; *Cincinnati, 16 cases; Oberlin, 1 case; Put-in-Bay, 27 cases, 1 death; Bays, 3 cases; Columbus Grove, 1 case; *Sandusky, 17 cases; *Lancaster, 1 case; *near Belmore, Putnam County, 2 cases; *Antioch College, Yellow Springs, 1 case; *Mineral Point, 1 case; *near Selma, Madison County, 1 case; *Newark, 1 case, traceable to Sandusky.

Case of smallpox in Pittsburg, Pa.

PITTSBURG, PA., *December 28, 1898.*

SIR: I have the honor to report that a case of smallpox was found in Mercy Hospital, medical ward, on Sunday, December 25. The case was sent to the pesthouse, and all proper precautions taken to prevent the development of other cases.

Very respectfully,

C. T. PECKHAM,
Surgeon, U. S. M. H. S.

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*Indicates disease still present.

Case of smallpox in Alexandria, Va.

ALEXANDRIA, VA., *December 27, 1898.*

SIR: I have to report to you finding of 1 case of variola (confluenta) here this date. So far have been able to trace this case to infection derived from a ragpicker in a junk shop. I have reason to believe that these rags were received from Norfolk; will, however, report further to you on information which the mayor has promised me to-morrow.

Very respectfully, HAMILTON P. HOWARD,
Sanitary Inspector, U. S. M. H. S.

ALEXANDRIA, VA., *December 28, 1898.*

SIR: I have to report to-day, in connection with my communication of yesterday, inclosed, that a consignment of rags, etc., from Norfolk or Portsmouth, Va., via Washington and Norfolk Steamboat Company, was received here about two weeks ago. Whether any of these found their way to dealer referred to yesterday or not, or whether ragpicker mentioned has worked for this man, I can not, as yet, state.

Very respectfully, HAMILTON P. HOWARD,
Sanitary Inspector, U. S. M. H. S.

Smallpox in Alexandria, Va.

ALEXANDRIA, VA., *January 4, 1899.*

SIR: I have to report to you occurrence of 1 case of variola seen to-day, with Dr. Miller, health officer, this case making a total of 3 here; has been affected for ten days. Type of case, discrete; first 2, confluent.

Very respectfully, HAMILTON P. HOWARD,
Sanitary Inspector.

Smallpox in Newport News, Va.

NEWPORT NEWS, VA., *December 31, 1898.*

SIR: I have the honor to report the existence of 4 cases of smallpox in this city. Necessary precautions to prevent the spread of this disease have been taken by the local health authorities.

Respectfully, yours, JOSEPH CHARLES,
Acting Assistant Surgeon, U. S. M. H. S.

Smallpox in Norfolk, Va.

NORFOLK, VA., *December 31, 1898.*

SIR: I have the honor to report that several cases of smallpox, the exact number I can not ascertain—probably as many as 10—have been found in the city. There are now about 70 cases, all in the pesthouse, save 2 or 3, which are quarantined in their homes. The board of health is taking vigorous and well-organized action in the matter. Medical inspectors are making a house-to-house canvass, and all cases of sickness are investigated. I have been unable to ascertain the condition of affairs relative to the disease in the county, but am of the opinion that it has improved.

Respectfully, yours, EDWD. E. FEILD,
Acting Assistant Surgeon, U. S. M. H. S.

Suspected smallpox at Rock Springs, Wyo.

ROCK SPRINGS, WYO., *December 24, 1898.*

SIR: I beg leave to report 1 case of suspected varioloid discovered yesterday, also 1 case of suspected smallpox, source of infection unknown, except, possibly, through an immigrant that was reported by authorities in New York as having been exposed on vessel, but was only quarantined for a few days, when he started for Rock Springs, Wyo. As we have twenty-three nationalities here at work in the mines, I was unable to locate him.

I am, sir, very respectfully, yours, R. HARVEY REED,
Surgeon-General, Wyoming National Guards.

Resolutions concerning inspection fees by the Jackson County, Miss., board of health.

GULF QUARANTINE STATION, *December 29, 1898.*

SIR: I have the honor to forward herewith a copy of a resolution passed by the Jackson County, Miss., board of health, in which the inspection fee on vessels bound for the port of Pascagoula, after receiving the pratique of this station, is done away with. The copy was sent me by Mr. F. H. Lewis, president of the Pascagoula Commercial Club.

Respectfully, yours, A. C. SMITH,
Passed Assistant Surgeon, U. S. M. H. S.

[Inclosure—Copy.]

Regular meeting of the board of health of Jackson County, Miss., held the second Monday of December, 1898. Present, P. K. Mayers, president; M. M. Evans, Volney Browne, and J. P. Delmas, members; and Dr. B. F. Duke, quarantine physician.

At said meeting the following order was adopted:

Resolved, That hereafter no inspection fee be charged any vessel entering the port of Pascagoula which has reported to the national quarantine station at Ship Island, Miss., and undergone and complied with the regulations of the Marine-Hospical Service, and have a pratique therefrom.

J. P. DELMAS, *Secretary.*

Smallpox in the United States as reported to the Supervising Surgeon-General United States Marine-Hospital Service, December 31, 1898, to January 6, 1899.

Places.	Date.	Cases.	Deaths.	Remarks.
Michigan:				
Detroit	Jan. 1	4		
Minnesota:				
Minneapolis	Dec. 8	1		
Oklahoma:				
Chandler	Dec. 30	1		
Doggett	do	1		
Parkland	do	1		
Sax and Fox Agency	do	2		
Stroud	do		3	
Pennsylvania:				
Bail Hill	Dec. 31	1		
Charlesville	do			Smallpox reported.
East Vincent Township	do	1		
Everett	do	3		
Homer City	do	2		
Hopewell	do	3		
Hustontown	do	4		
New Granada	do	7		
Pittsburg	do	1		
Steeltown	do	11		
Waterfall	do	1		
Virginia:				
Alexandria	Jan. 4	3		
Newport News	Dec. 31	4		
Norfolk	do	10		
Wyoming:				
Rock Springs	Dec. 24	1		

Report of immigrants inspected at port of Baltimore during the month of December, 1898.

BALTIMORE, MD., *December 31, 1898.*

SIR: I have the honor to report that there were 752 steerage passengers and 10 cabin passengers inspected at this port during the month of December, 1898. One case was rejected for diphtheria and 1 case on account of smallpox. Both cases were sent to hospital.

Respectfully, yours, GEO. PURVIANCE,
Surgeon, U. S. M. H. S.

Report of immigration at Boston for the week ended December 24, 1898.

OFFICE OF U. S. COMMISSIONER OF IMMIGRATION,
Port of Boston, December 25, 1898.

Number of alien immigrants who arrived at this port during the week ended December 24, 1898; also names of vessels and ports from which they came.

Date.	Vessel.	Where from.	No. of immigrants.
Dec. 18	Steamship Boston	Yarmouth, Nova Scotia	35
Dec. 19	Steamship Catalonia	Liverpool, England	37
Do.	Steamship Beverly	Port Morant, Jamaica	1
Dec. 21	Steamship Prince George	Yarmouth, Nova Scotia	57
Dec. 22	Steamship Halifax	Halifax, Nova Scotia	23
Do.	Steamship Boston	Yarmouth, Nova Scotia	52
Do.	Steamship Michigan	Liverpool, England	11
Do.	Steamship Irishman	do	22
Do.	Steamship Victorian	do	26
Do.	Steamship Columbian	London, England	28
Do.	Steamship Manitoban	Glasgow, Scotland	2
Dec. 23	Steamship Sylvania	Liverpool, England	9
Dec. 24	Steamship Prince George	Yarmouth, Nova Scotia	74
	Total		377

GEORGE B. BILLINGS,
Commissioner.

Report of immigration at Philadelphia for the week ended December 31, 1898.

OFFICE OF U. S. COMMISSIONER OF IMMIGRATION,
Port of Philadelphia, December 31, 1898.

Number of alien immigrants who arrived at this port during the week ended December 31, 1898; also names of vessels and ports from which they came.

Date.	Vessel.	Where from.	No. of immigrants.
Dec. 25	Steamship Admiral Sampson	Jamaica	3
Dec. 26	Steamship Rhynland	Liverpool and Queenstown	39
	Total		42

JNO. J. S. RODGERS,
Commissioner.

REPORTS FROM NATIONAL QUARANTINE

Name of station.	Week ended.	Name of vessel.	Date of arrival.	Port of departure.
Alexandria, Va	Dec. 31			
Beaufort, N. C	do			
Brunswick, Ga	do	Br. bk. Geo. Thompson (a)	Dec. 21	Rio
Cape Charles, Va	do			
Cape Fear, N. C	do			
Delaware Breakwater Quarantine, Del.	do			
Eureka, Cal	Dec. 17			
Grays Harbor, Wash	Dec. 24			
Gulf Quarantine, Miss	do	U. S. sc. James Slater	Dec. 21	Habana
Honolulu, Hawaiian Islands	Dec. 10			
Newbern, N. C	Dec. 31			
Port Townsend, Wash	Dec. 24			
Reedy Island Quarantine, Del	Dec. 17			
	Dec. 24			
	Dec. 31			
San Diego, Cal	Dec. 22			
San Francisco Quarantine, Cal	Dec. 24			
South Atlantic Quarantine, Blackbeard Island, Ga.	do	Br. sc. John S. Parker	Dec. 20	Habana
Tortugas Quarantine, Key West, Fla.	do			
Washington, N. C	Dec. 31			

a Previously reported.

REPORTS FROM STATE AND

Name of station.	Week ended.	Name of vessel.	Date of arrival	Port of departure.
Anclote, Fla	Dec. 31			
Baltimore, Md	do			
Bangor, Me	do			
Boston, Mass	do			
Carabelle, Fla	do			
Charleston, S. C	do			
Charlotte Harbor, Fla	Dec. 24			
	Dec. 31			
Elizabeth River, Va	do			
Galveston, Tex	do			
Gardiner, Oreg	do			
Key West, Fla	Dec. 24			
	Dec. 31			
Los Angeles, Cal	Dec. 24			
Mobile, Ala	do			
New Bedford, Mass	Nov. 12			
Newport News, Va	Dec. 31			
Newport, R. I	do			
Pass Cavallo, Tex	do			
Providence, R. I	do			
Round Island, Miss	Dec. 24			
San Pedro, Cal	do			
Savannah, Ga	do			
	Dec. 31			
Tampa Bay, Fla	Dec. 31			

AND INSPECTION STATIONS.

Destination.	Treatment of vessel, passengers, and cargo.	Date of departure.	Remarks.	Vessels inspected and passed.
			No transactions	
			No report	
Brunswick	Ballast discharged and hold washed.	Dec. 29		7
			No report	
				1
				7
			No transactions	
				2
Pascagoula	Disinfected and held		One case yellow fever in port of departure.	2
				4
			No transactions	
				9
				18
				30
				15
				2
			No report	
Jacksonville	Disinfected and held		Remanded from Jacksonville; 2 cases intermittent fever.	5
			No transactions	
				1

MUNICIPAL QUARANTINE STATIONS.

Destination.	Treatment of vessels, passengers, and cargo.	Date of departure.	Remarks.	Vessels inspected and passed.
			No report	
				26
			No report	
			do	
			do	
				5
			No report	
			do	
				1
			No report	
			do	
				18
				7
		a	No transactions	
				21
			No report	
				4
			No report	
			do	
				1
				3
			No report	
				21
			U. S. transport *Chester* arrived on Dec. 26, two days out from Habana. One death on board, a soldier, from dysentery.	13
			No report	

Reports of States and yearly and monthly reports of cities of the United States.

COLORADO—*Denver.*—Month of November, 1898. Estimated population, 167,000. Total number of deaths, 180, including diphtheria, 1; enteric fever, 8, and 41 from phthisis pulmonalis.

IOWA—*Boone.*—Month of November, 1898. Estimated population, 3,330. Total number of deaths, 12.

Burlington.—Estimated population, 30,000. Total number of deaths, 25, including 2 from phthisis pulmonalis.

Davenport.—Estimated population, 36,000. Total number of deaths, 27, including 3 from phthisis pulmonalis.

Des Moines.—Estimated population, 72,000. Total number of deaths, 58, including diphtheria, 1; enteric fever, 5, and 8 from phthisis pulmonalis.

Dubuque.—Estimated population, 45,000. Total number of deaths, 39, including diphtheria, 4; enteric fever, 1, and 4 from phthisis pulmonalis.

Ottumwa.—Estimated population, 18,000. Total number of deaths, 19, including diphtheria, 3.

Sibley.—Estimated population, 1,300. Total number of deaths, 2.

Sioux City.—Month of October, 1898. Estimated population, 37,000. Total number of deaths, 35, including diphtheria, 3; enteric fever, 2, and 3 from phthisis pulmonalis.

MICHIGAN.—Reports to the State board of health, Lansing, for the week ended December 24, 1898, from 51 observers, indicate that inflammation of bowels, phthisis pulmonalis, diarrhœa, and enteric fever increased, and pleuritis decreased in area of prevalence. Phthisis pulmonalis was reported present at 133, enteric fever at 46, scarlet fever at 44, measles at 20, diphtheria at 19, whooping cough at 15 places, and smallpox at 1 place—Detroit.

NEW YORK.—Reports to the State board of health, Albany, for the month of November, 1898, from 156 cities, towns, and villages, show a total of 8,709 deaths, including diphtheria, 242; enteric fever, 189; measles, 18; scarlet fever, 32; whooping cough, 52; smallpox, 1, and 1,049 from phthisis pulmonalis. The Monthly Bulletin says:

The mortality reported this month is at the average daily rate for the State of 290, and an annual rate per 1,000 population of 15.75 against 15.30 for the corresponding month of last year; there were 400 more deaths than in November, 1897, when there were likewise 400 more than in the year preceding. There has been a diminution from October of 900 deaths. The saving in mortality from last month is in zymotic diseases, which constitute now 9 per cent of the deaths against 14 per cent then, the chief decrease being in diarrheal diseases, which caused 500 fewer deaths, and typhoid fever, from which there were 90 fewer deaths, diphtheria showing a moderate increase. Of local diseases, acute respiratory diseases caused 250 more deaths, and there was an increase of 75 deaths in diseases of the circulatory system, but diseases of the digestive system are less by more than 300. The mortality of

early life was lessened by 900 deaths. This is the month of lowest mortality in the year in this State, the average daily rate of the preceding ten months of the present year being 330, which rate would have added 1,200 deaths to the mortality of the month; the diarrheal and digestive diseases of summer have subsided and respiratory diseases have not reached the winter rate. Diphtheria has not shown the usual increase from October and caused less than half the average mortality of November, 2.7 per cent of all deaths, and but 70 deaths outside the maritime district. Typhoid fever caused 100 fewer deaths than in October, and about the average for the month for the past ten years. All zymotic diseases caused 9 per cent of deaths from all causes, against the average for November of 14.5 per cent. The first death from smallpox in the State since July, 1897, is reported from New York City, where, during the year, there have been 13 cases from a source distinct from that of the western part of the State; for a period of four weeks there has been no new point of development of the disease, until recently a case appeared in Almond, Allegany County, and one in Batavia; since the first of December Caneadea and Rochester have each reported 2 new cases.

The mean average temperature during the month was 1° below the normal, winter weather with general fall of snow having set in on the 24th; the precipitation was 1 inch in excess, and the wind variable but generally westerly.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

Cities.	Week ended.	Population, U. S. Census of 1890.	Total deaths from all causes.	Deaths from—										
				Phthisis pulmonalis.	Yellow fever.	Smallpox.	Varioloid.	Cholera.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Ann Arbor, Mich	Dec. 24	9,431	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ashland, Wis	do	9,956	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ashtabula, Ohio	do	8,338	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aurora, Ill	do	19,688	8	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Binghamton, N. Y	Dec. 31	35,005	20	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boston, Mass	do	448,477	220	27	.....	.....	.....	.....	.....	2	.....	3	.....	1
Brockton, Mass	Dec. 24	27,294	7	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cambridge, Mass	do	70,028	23	3	.....	.....	.....	.....	.....	1	.....	1	.....	.....
Do	Dec. 31	70,028	24	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Charleston, S. C	Dec. 24	a 54,955	b 37	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cleveland, Ohio	do	261,353	102	4	.....	.....	.....	.....	.....	4	1	3	.....	.....
Concord, N. H	do	17,044	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Denver, Colo	Dec. 17	106,713	37	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dubois, Pa	do	6,149	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Dec. 24	6,149	4	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Dunkirk, N. Y	do	9,416	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Erie, Pa	do	40,634	25	4	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Everett, Mass	Dec. 17	11,068	6	1	.....	.....	.....	.....	.....	1	.....	1	.....	.....
Fall River, Mass	Dec. 31	74,398	32	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fitchburg, Mass	Dec. 24	22,037	4	2	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Flint, Mich	do	9,803	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Green Bay, Wis	do	9,069	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Haverhill, Mass	Dec. 31	27,412	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Holyoke, Mass	do	35,647	14	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Jacksonville, Fla	Dec. 24	17,201	17	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jersey City, N. J	Dec. 2	163,003	94	10	.....	.....	.....	.....	.....	.....	1	1	.....	1
Johnstown, Pa	Dec. 24	21,805	12	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kalamazoo, Mich	do	17,853	3	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lancaster, Pa	do	32,011	13	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
Lawrence, Mass	do	44,654	23	1	.....	.....	.....	.....	.....	.....	.....	3	.....	.....
Lowell, Mass	Dec. 31	77,696	47	2	.....	.....	.....	.....	.....	1	.....	1	.....	.....
Lynchburg, Va	do	19,709	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
McKeesport, Pa	Dec. 24	20,741	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Manchester, N. H	do	44,126	20	3	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Massillon, Ohio	Dec. 31	10,092	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Medford, Mass	do	11,079	5	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Melrose, Mass	Dec. 24	8,519	4	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Michigan City, Ind	Dec. 31	10,776	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Middletown, N. Y	Dec. 23	7,681	7	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Middletown, Ohio	Nov. 19	11,977	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Nov. 26	11,977	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Dec. 3	11,977	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Dec. 10	11,977	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Dec. 17	11,977	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Dec. 24	11,977	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Dec. 31	11,977	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Milwaukee, Wis	Dec. 24	204,468	74	5	.....	.....	.....	.....	.....	.....	.....	4	.....	.....
Minneapolis, Minn	do	164,738	36	3	.....	.....	.....	.....	.....	1	.....	1	.....	1
Nashville, Tenn	Dec. 31	76,168	34	2	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Newburyport, Mass	Dec. 24	13,947	6	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
New Bedford, Mass	Dec. 31	40,733	17	.....	.....	.....	.....	.....	.....	1	.....	1	.....	1
New Orleans, La	Dec. 24	242,039	122	12	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Newport, R. I	Dec. 31	19,457	11	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Norristown, Pa	Dec. 24	19,791	9	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Dec. 31	19,791	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Omaha, Nebr	Dec. 24	140,452	35	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oneonta, N. Y	Dec. 31	6,272	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Philadelphia, Pa	do	1,046,964	725	63	.....	.....	.....	.....	.....	21	2	30	1	3
Pittsburg, Pa	Dec. 24	238,617	96	3	.....	.....	.....	.....	.....	7	2	2	1	4
Plainfield, N. J	Dec. 31	11,267	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Providence, R. I	do	132,146	57	6	.....	.....	.....	.....	.....	.....	.....	2	.....	2
Pueblo, Colo	Dec 24	24,558	13	.....	.....	2	.....	.....	.....	1	.....	.....	.....	.....
Salt Lake City, Utah	do	44,843	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Santa Barbara, Cal	do	5,864	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Sault Ste. Marie, Mich	do	5,760	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Savannah, Ga	do	43,189	17	3	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Shreveport, La	do	11,979	8	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do	Dec. 31	11,979	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Spokane, Wash	Dec. 24	19,922	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Springfield, Ill	Dec. 26	24,963	20	3	.....	.....	.....	.....	.....	1	.....	.....	.....	.....

a Estimated poulation, 65,165—white, 28,870; colored, 36,295. b White, 14; colored, 23.

MORTALITY TABLE, CITIES OF THE UNITED STATES—Continued.

Cities.	Week ended.	Population, U. S. census of 1890.	Total deaths from all causes.	Deaths from—										
				Phthisis pulmonalis.	Yellow fever.	Smallpox.	Variolold.	Cholera.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Tacoma, Wash	Dec. 24	36,006	10	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Taunton, Mass.	do	25,448	14	3	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Tiffin, Ohio	Dec. 31	10,801	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Waltham, Mass	Dec. 24	18,707	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warren, Ohio	do	5,973	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Washington, D. C	do	230,392	115	11	.....	.....	.....	.....	.....	3	.....	1	.....	.....
Westfield, Mass	do	9,805	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wheeling, W. Va	do	35,013	10	1	.....	.....	.....	.....	.....	1	1	.....	.....	.....
Wichita, Kans	Dec. 31	23,853	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wilmington, Del	do	61,431	33	1	.....	.....	.....	.....	.....	1	.....	1	.....	1
Worcester, Mass	Dec. 23	84,655	32	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Yonkers, N. Y	Dec. 30	32,033	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Youngstown, Ohio	Dec. 31	33,220	5	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1

Table of temperature and rainfall, week ended December 26, 1898.

[Received from Department of Agriculture, Weather Bureau.]

Locality.	Temperature in degrees Fahrenheit.			Rainfall in inches and hundredths.		
	Normal.	aExcess.	aDefic'ncy.	Normal.	Excess.	Deficiency.
Atlantic Coast:						
Eastport, Me	24	8		.91		.38
Portland, Me	27	5		.77	.08	
Northfield, Vt	22	7		.70		.32
Boston, Mass	30	6		.73	.12	
Vineyard Haven, Mass	35	4		.70	1.14	
Nantucket, Mass	37	2		.98	.40	
Woods Hole, Mass	34	2		.72	1.32	
Block Island, R. I	36	2		.81	1.98	
New Haven, Conn	31	3		.76	.33	
Albany, N. Y	27	6		.62		.33
New York, N. Y	33	5		.76	.85	
Harrisburg, Pa	32	2		.70	.73	
Philadelphia, Pa	35	5		.63	1.36	
New Brunswick, N. J	32	4		.83	1.31	
Atlantic City, N. J	36	5		.91	.84	
Baltimore, Md	37	3		.70	.63	
Washington, D. C	35	2		.70	.70	
Lynchburg, Va	39	2		.73	1.09	
Cape Henry, Va	42	7		.91		.28
Norfolk, Va	43	9		.84	.11	
Charlotte, N. C	44	7		1.00		.21
Raleigh, N. C	46	6		.68		.07
Kittyhawk, N. C	44	8		.98		.33
Hatteras, N. C	49	5		1.26		.24
Wilmington, N. C	49	7		.71		.47
Columbia, S. C	47	7		.68		.26
Charleston, S. C	53	6		.76		.04
Augusta, Ga	48	7		.77		.28
Savannah, Ga	54	6		.77	.38	
Jacksonville, Fla	58	4		.65	1.97	
Jupiter, Fla	67	4		.61	.36	
Key West, Fla	71	4		.35	.20	
Gulf States:						
Atlanta, Ga	44	6		1.02	.64	
Tampa, Fla	62	4		.56	.38	
Pensacola, Fla	54	2		.91	1.26	
Mobile, Ala	52	2		1.05		.91
Montgomery, Ala	50	6		1.10		1.02
Vicksburg, Miss	50		2	1.12		1.12
New Orleans, La	55	1		.98		.97
Shreveport, La	48		2	1.05		1.05
Fort Smith, Ark	43	0		.70		.66
Little Rock, Ark	44		5	.98		.89
Palestine, Tex	52		5	.84		.84
Galveston, Tex	56		3	.91		.91
San Antonio, Tex	55		3	.42		.42
Corpus Christi, Tex	60		7	.28		.28
Ohio Valley and Tennessee:						
Memphis, Tenn	43	3		.97		.97
Nashville, Tenn	41	3		.88		.77
Chattanooga, Tenn	44	4		1.01		.56
Knoxville, Tenn	41	5		.91		.49
Louisville, Ky	38	5		.81		.24
Indianapolis, Ind	33	4		.70	.24	
Cincinnati, Ohio	36	5		.70		.31
Columbus, Ohio	33	6		.64		.52
Parkersburg, W. Va	39	3		.70		.35
Pittsburg, Pa	35	7		.67		.22
Lake Region:						
Oswego, N. Y	29	5		.77	.12	
Rochester, N. Y	28	5		.70		.40
Buffalo, N. Y	29	6		.77		.35
Erie, Pa	33	3		.70		.14
Cleveland, Ohio	31	6		.56	.15	
Sandusky, Ohio	33	5		.56	.42	
Toledo, Ohio	29	5		.52	.47	
Detroit, Mich	28	4		.56	.50	
Lansing, Mich	27	1		.42	.57	
Port Huron, Mich	28	3		.49	.09	
Alpena, Mich	25	1		.55	.28	
Sault Ste. Marie, Mich	24		1	.47		.21
Marquette, Mich	22	1		.50		.47
Green Bay, Wis	24		4	.56		.08
Grand Haven, Mich	29	0		.56	.87	

a The figures in these columns represent the average daily departure.

Table of temperature and rainfall, week ended December 26, 1898—Continued.

Locality.	Temperature in degrees Fahrenheit.			Rainfall in inches and hundredths.		
	Normal.	a Excess.	a Defic'ncy.	Normal.	Excess.	Deficiency.
Lake Region—*Continued.*						
Milwaukee, Wis.	24	4		.43	.06	
Chicago, Ill.	29	0		.49	.37	
Duluth, Minn.	15	5		.28		.22
Upper Mississippi Valley:						
St. Paul, Minn.	17	4		.28		.17
La Crosse, Wis.	23	0		.29		.04
Dubuque, Iowa.	26	1		.42		.17
Davenport, Iowa.	27	2		.35	.16	
Des Moines, Iowa.	26	2		.29		.25
Keokuk, Iowa	29	3		.42	.38	
Hannibal, Mo.	30	3		.29	.35	
Springfield, Ill.	32	0		.63	.27	
Cairo, Ill.	38	3		.73		.70
St. Louis, Mo.	33	4		.60		.32
Missouri Valley:						
Columbia, Mo.	38		6	.42	.36	
Springfield, Mo.	38		3	.63		.53
Kansas City, Mo.	29	4		.29		.15
Topeka, Kans.	33		1	.21	.07	
Wichita, Kans.	38		5	.21		.14
Concordia, Kans.	33		2	.10	.08	
Lincoln, Nebr.	28	2		.15		.09
Omaha, Nebr.	24	5		.21		.15
Sioux City, Iowa.	26	2		.24		.22
Yankton, S. Dak.	20	12		.14		.14
Valentine, Nebr.	25	5		.08		.08
Huron, S. Dak.	16	11		.14		.12
Pierre, S. Dak.	22	10		.14		.14
Moorhead, Minn.	8	12		.14		.06
Bismarck, N. Dak.	10	17		.14		.14
Williston, N. Dak.	8	17		.17		.17
Rocky Mountain Region:						
Havre, Mont.	16	17		.14		.14
Helena, Mont.	21	10		.21		.18
Miles City, Mont.	17	13		.07		.04
Rapid City, S. Dak.	26	8		.06		.06
Spokane, Wash.	29	2		.63		.63
Wallawalla, Wash.	36	3		.32		.51
Baker City, Oreg.	27		4	.42		.15
Winnemucca, Nev.	30		4	.30	.26	
Idaho Falls, Idaho	21		7	.35		.30
Salt Lake City, Utah	32		9	.36	.25	
Lander, Wyo.	21	0		.10		.09
Cheyenne, Wyo.	25		1	.07	.16	
North Platte, Nebr.	24	7		.14		.14
Denver, Colo.	30		1	.14	.10	
Pueblo, Colo.	33		8	.14	.06	
Dodge City, Kans.	30	1		.14		.12
Oklahoma, Okla.	37	2		.61		.61
Amarillo, Tex.	34		7	.19		.15
Abilene, Tex.	48		6	.33		.33
Santa Fe, N. Mex.	30		8	.17		.17
El Paso, Tex.	46		6	.11		.11
Phœnix, Ariz.	52			.32		
Pacific Coast:						
Seattle, Wash.	41	1		1.26		.78
Tacoma, Wash.	40	1		1.68		.51
Fort Canby, Wash.	43	1		2.24	1.60	
Portland, Oreg.	40	1		1.85		1.00
Roseburg, Oreg.	40		1	1.60		1.04
Eureka, Cal.	48		3	1.96		1.73
Redbluff, Cal.	46	0		1.29		.90
Carson City, Nev.	33	2	2	.49		.37
Sacramento, Cal.	47		5	1.02	.03	
San Francisco, Cal.	51		2	1.23		.57
Fresno, Cal.	45		1	.35		.34
San Luis Obispo, Cal.	52	2		1.05		1.05
Los Angeles, Cal.	54	3		.99		.99
San Diego, Cal.	55		1	.48		.47
Yuma, Ariz.	56	4		.14		.14

a The figures in these columns represent the average daily departure.

FOREIGN.

[Reports received from United States consuls through the Department of State and from other sources.]

Cholera, yellow fever, plague, and smallpox as reported to the Supervising Surgeon-General United States Marine-Hospital Service, December 31, 1898, to January 6, 1899.

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Madras	Nov. 19-Nov. 25	.....	5	

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Rio de Janeiro	Nov. 11-Nov. 25	12	7	
Colombia:				
Barranquilla	Dec. 2-Dec. 9	1	1	
Cuba:				
Habana	Dec. 16-Dec. 22	.....	1	
Mexico:				
Vera Cruz	Dec. 8-Dec. 22	.....	13	

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay	Nov. 22-Nov. 29	.....	43	
Madras	Nov. 19-Nov. 25	.....	1	

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Bahia	Nov. 19-Nov. 26	46	3	
Rio de Janeiro	Nov. 11-Nov. 25	38	14	
England:				
Liverpool	Dec. 3-Dec. 10	1	1	
India:				
Bombay	Nov. 22-Nov. 29	.....	1	
Japan:				
Awomori Ken	Nov. 18-Dec. 8	53	13	
Hiogo Ken	Nov. 18-Dec. 8	1	.....	
Kanagawa Ken	Nov. 18-Dec. 8	1	.....	
Nagasaki Ken	Nov. 18-Dec. 8	1	.....	
The Hokkaido	Nov. 18-Dec. 8	8	.....	
Tottori Ken	Nov. 18-Dec. 8	3	.....	
Russia:				
Moscow	Nov. 26-Dec. 3	13	11	
Odessa	Dec. 3-Dec. 9	5	1	

BRAZIL.

Sanitary report from Rio.

RIO DE JANEIRO, *November 24, 1898.*

SIR: I have the honor to transmit to you the official report for the week ended November 11. There were 238 deaths from all causes, a decrease of 35 as compared with the foregoing week; 11 deaths from accesso pernicioso, a decrease of 1; 3 deaths from yellow fever, an increase of 1; 3 deaths from smallpox, the same as before; no death from typhoid fever and diphtheria, a decrease of 3 and 1, respectively; 3 deaths from whooping cough, an increase of 2; 1 death from beriberi, a decrease of 4, and 50 deaths from tuberculosis, a decrease of 3.

* * * * * * *

Information.—During the last two weeks we have had numerous rainy days. In general the state of health has been favorable. Light forms of bronchitis and rheumatic diseases occurred in great number. The number of fatal cases of tuberculosis shows a considerable increase.

Of infectious diseases, yellow fever continues, although in an unimportant degree. Smallpox prevails in the same manner as before, the death rate of the last week showing even an increase. However, at present, varicella and whooping cough exist in mild forms. Meanwhile, also, an unusual number of men-of-war of different nations have been in this port and have left it again. Fortunately there has not occurred any feverish infectious disease among the crews. It was rumored that on board of an Italian man-of-war there had been a suspicious case of yellow fever, but this report has been officially contradicted. Especially on board of the American squadron, consisting of the battle ships *Oregon* and *Iowa*, and the transport *Celtic*, the state of health has been perfectly satisfactory.

Since last report the following-named ships have been inspected and received bills of health of this office: November 18, steamship *York*, British, for New Orleans. November 19, barkentine, *Frances*, American, for Baltimore. November 21, steamship *Livorno*, German, for New York. November 22, steamship *Buffon*, British, for New York. November 27, ship *Ellerslie*, British, for Mobile.

Respectfully, yours, W. HAVELBURG, M. D.,
Sanitary Inspector, U. S. M. H. S.

The SUPERVISING SURGEON-GENERAL,
U. S. Marine-Hospital Service.

RIO DE JANEIRO, *November 28, 1898.*

SIR: I have the honor to transmit to you the official report for the week ended November 18. There were 261 deaths from all causes, an increase of 23 as compared with the foregoing week; 8 deaths from accesso pernicioso, a decrease of 3; 2 deaths from yellow fever, a decrease of 1; 8 deaths from smallpox, an increase of 5; 2 deaths from typhoid fever, an increase of 2; 2 deaths from measles, an increase of 2; 1 death from whooping cough, a decrease of 2; no deaths from beriberi, a decrease of 1, and 60 deaths from tuberculosis, an increase of 10.

* * * * * * *

MORTALITY IN RIO FOR FORTY-EIGHT YEARS.

Information.—The character of the general state of health has not changed during the last week, compared with the foregoing week.

Dr. Nuno de Andrade, director-general of public health, has just published especial bulletins on the mortality of this city for a period of forty-eight years. In this work there are lacking data in relation to the period elapsed from 1851 to 1858. It contains 16 instructive diagrams. He says that he was induced to prepare this document by the uncertainty, alleged by physicians and others, concerning the mortality among children in the city of Rio de Janeiro. According to this work there were, during forty years, 486,197 deaths, of which 118,429 were children. He says that the percentage of deaths among children in the total death rate was as follows:

London, 1896, 44.9 per cent; Paris, 1892, 25.9 per cent; Washington, 1895, 31.8 per cent; Buenos Ayres, 1896, 36.6 per cent; Montevideo, 1894, 35.5 per cent; Rio de Janeiro, average for the five years, 1893–1897, 27.2 per cent.

Yellow fever and tuberculosis.—The tables referring to yellow fever and tuberculosis attract at once general attention. These diseases together have caused 132,598 deaths, the number caused by all other diseases being 329,537. In this number are not included stillbirths.

The number of deaths caused by yellow fever from 1850 to 1898 was 53,515, and that of the deaths caused from 1859 to 1898 by tuberculosis, 79,083.

Dr. Andrade remarks that the mortality caused by tuberculosis has been comparatively greater than it is now. As the population of the city was estimated at 350,000 in 1859, and at 650,000 in 1896, it is seen, he asserts, that the number of deaths from tuberculosis declined from 58.7 per cent to 40.5 per cent.

Table No. 4 shows that from 1889 to June 30, 1898, the mortality caused by yellow fever has made remarkable progress. In this incomplete decade there were registered 17,539 deaths from yellow fever (also called icteroid typhus), against 8,473 in the previous decade.

Although some of the epidemics in recent years, especially those of 1891 and 1898, assumed the form of a real calamity in view of a great number of deaths in proportion to the number of cases, "it is not correct," says Dr. Nuno de Andrade, "to explain the increase to double the number of deaths since 1889 against ten years before by attributing it to the accidental increase of intensity of the infection." Another factor, he states, has led to this result, and this, he asserts, is the rapid increase of the population of this city through the numerous immigration to this capital from all the States of the Brazilian Union and from foreign countries since 1889, when the change of the former government attracted general attention to the center of radiation in the new life of the nation. In the four years from 1894 to 1897, inclusive, the excess of arrivals over departures was, he says, 160,257.

He gives the following table of the estimated population and the number of deaths from yellow fever:

Year.	Population.	Deaths.	Year.	Population.	Deaths.
1880	432,000	1,693	1890	550,000	719
1881	440,000	257	1891	564,000	4,454
1882	451,000	502	1892	578,000	4,413
1883	463,000	1,606	1893	592,000	742
1884	474,000	649	1894	617,000	4,715
1885	486,000	445	1895	633,000	818
1886	498,000	1,446	1896	650,000	2,900
1887	511,000	137	1897	679,000	159
1888	523,000	754	1898 (a)	750,000	918
1889	537,000	2,155			

a Six months.

Malarial fevers.—The number of deaths from malarial infection in this city from 1868 to 1898, inclusive, was, according to Table No. 5, 31,553. Dr. Nuno de Andrade says that it is necessary to bear in mind, that from a certain date up to the present time the number of deaths in the city of Rio de Janeiro has been increased by the reception at hospitals of patients, who have come from suburban localities for the purpose of being treated in those establishments. If they recover, they return to their residences, but if they died, then the urban death rate is increased by the addition of this alien factor. The patients of this class are principally those who suffer from malarial affections, tuberculosis, beriberi, and hypoæmia (anæmia intertropical, caused by the anchylostomum duodenate).

Accesso pernicioso.—The extremely great number of deaths in 1889, 1891, 1892, and 1894 displays, he says, the anomaly of "accesso pernicioso." There are some physicians who think that an incomplete diagnosis classified among acute forms of malarial affections many cases of different character and they are inclined to attribute these deaths to the exclusive influence of the high temperature and say, that these cases belong to the ancient syriasis or, according to the French expression, "coup de chaleur." Dr. Nuno de Andrade says that he does not agree with this opinion, which, he says, is not supported by the meteorological phenomenon, which is alleged in its support. Up to the present the most reliable statements induce him, he says, to reject the hypothesis of syriasis, but he hesitates between the theory of accesso pernicioso and that of very acute yellow fever. In the years mentioned above the epidemic disease was in reality intense and in this respect the table of malarial infection seems to coincide with that of yellow fever; practically, however, he goes on to say, the doubt will be settled by the direct examination of the blood.

Smallpox.—The great epidemics of eruptive fevers in 1865, 1872, 1873, 1878, 1883, 1887, 1891, and 1895, in which the mortality caused by acute exanthemata exceeded 1,000 deaths per annum, consisted almost entirely of smallpox. This is shown by the following table:

Years.	All eruptive fevers.	Smallpox.	Years.	All eruptive fevers.	Smallpox.
1865	1,239	1,226	1883	1,505	1,366
1872	1,096	1,021	1887	3,633	3,397
1873	1,695	1,629	1891	4,017	3,944
1878	2,245	2,175	1895	1,924	1,865

This proportion is maintained in other years in the period from 1859 to 1898, so that in the total number of 25,299 deaths resulting from eruptive fevers during the forty years, 21,410 were caused by smallpox.

Beriberi.—Table No. 7 refers to beriberi. While in the period from 1874 to 1888, inclusive, the total number of deaths from beriberi was about 300; in the year 1889 the number of deaths from this cause alone amounted to 500. Of the total number of 3,161 deaths from beriberi in twenty-four years, 2,850 belong to the ten years from 1889 to 1898.

It is known that the Brazilian navy furnishes a large number of cases to the beriberi mortality, and, calculating the number of persons who belong to that navy, it is seen, we regret to say, that the greater part of that personnel is gradually devoured by the disease.

Led by the humane wish to throw light on the dark etiological problem of beriberi, some physicians have attributed the disease to the food

of the crews, as especially to the use of hulled rice, which is considered the principal cause of this infection. Dr. Andrade obtained from the chief of staff of the navy a schedule of the rations furnished to the navy, and it was found that rice forms quite an insignificant part thereof. He is convinced that it is unnecessary to make any radical change in the ration, which, with a few slight additions, will be equal to that of the American navy, which he regards as the best.

Intestinal diseases.—Table No. 9 shows the mortality resulting from diseases of the digestive tube in the period of thirty years, beginning with 1868. This table would not attract attention were it not for the mortality among children, which is highly significant. Although it is observed that the general mortality resulting from such diseases has increased, which is explained by the increasing of the population, it may be noted that the proportion of deaths among children from this cause to the general death rate is constantly increasing.

He states that the number of fatal cases resulting from the diseases, indefinitely classified as hereditary weakness, has increased considerably.

Infantile tetanus is here comparatively rare; on the other hand, there are frequent cases of death from convulsions, which is not surprising in view of the extreme excitability of the nervous system of children.

In every 100 cases of deaths from diseases of the digestive tube the proportion of children has been as follows: 1868–1876 (9 years), 39; 1882–1891 (10 years), 57; 1892–1898 (6½ years), 64.

Census of Rio.—In regard to the population of the city of Rio de Janeiro Dr. Nuno de Andrade makes the following statements:

"The census of 1849 estimated the population of this city at 205,905, and that of 1890 at 429,848. Considering that the factors which form the base of those estimates were insufficient, it is necessary to increase those figures, and 10 per cent, which is admitted as an average, should be added to the said figures. In the case in question this increase of 10 per cent is too moderate, and it shows the number of 226,495 for 1849, and for 1890 472,832. Dividing the difference of 256,337 by the number of years in the interval we have the quotient of 6,252 as the theoretical rate of annual increase both from birth rate and from immigration. This quotient is equivalent to about 2.75 per cent of the population of 1849, and about 1.32 per cent of that of 1890. The medium of these two extremes is 2.03 per cent, which thus constitutes the arithmetical rate of increase per annum."

He then goes on by a process difficult to explain that the number 472,832, to which he has increased the census report of 429,848, is also insufficient, and he consequently adds 77,664 more, thus making the total of 550,496, and adds that consequently the present population must be about 750,000, as stated in the bulletins of his office, which, in his opinion, is still perhaps even less than the actual population.

Dr. Andrade then goes on to prove this by means of the mortality in the forty years from 1849–1898. Excluding the stillbirths, the total number of deaths in the 8 periods of five years each was as follows: 1859–1863, 45,607; 1864–1868, 41,933; 1869–1873, 51,479; 1874–1878, 57,230; 1879–1883, 53,002; 1884–1888, 54,959; 1889–1893, 82,934; 1894–1898 (4½ years), 74,992.

Applying these figures to the estimated population in the respective years, the percentage of mortality was as follows: First five years, 22.9 per cent; fourth five years, 31.3 per cent; sixth five years, 30.1 per cent; seventh five years, 45.4 per cent.

What can explain the wonderful leap from 31.3 per cent to 45.4 per

cent? asked Dr. Nuno de Andrade, and he answers, Evidently, the sudden increase of the population from 1889 up to this date, in consequence of which the rate of 2.5 per cent no longer represents the real increase as it did at one time. Therefore, the year 1898 figures with the difference between the arrivals and departures in 1897, and the estimate of 750,000 must be considered as that of the minimum population of Rio de Janeiro.

Since last report the following-named ships have been inspected and received bills of health of this office: November 26, steamship *British Prince*, British, for New York; bark *Baltimore*, American, for Baltimore. November 28, steamship *Bellenden*, British, for New York; steamship *Etona*, British, for New York. November 30, steamship *Cyprian Prince*, British, for New York.

Respectfully, yours, W. HAVELBURG, M. D.,
Sanitary Inspector, U. S. M. H. S.

The SUPERVISING SURGEON-GENERAL,
U. S. Marine-Hospital Service.

CUBA.

Sanitary report from Habana.

HABANA, CUBA, *December 24, 1898.*

SIR: I have the honor to submit the following report for the week ended Thursday, December 22:

The death rate is slowly decreasing each week; the present week shows the lowest mortality since the early spring. The only death from yellow fever occurred in one of the military hospitals. There was a marked decrease of deaths from enteric fever compared with the previous week.

The Spanish troops are being rapidly brought in from the country districts to embark for Spain, and the sugar warehouses which line the water front are filled with these troops; the wharves connected with these warehouses are so filled up with human excrement that masters of vessels have again refused to allow their vessels to go alongside the wharves. There must be about 7,000 soldiers occupying these warehouses and all the excreta from these troops are piled up on the wharf front.

Transports bringing troops and supplies still continue to go to San José Wharf, where they lie from two to four days. The *Chester* and *Minnewaska* are now there.

Passenger steamers plying between ports in Florida and Habana are remaining in this harbor either all night or a great portion of it. I have been asked to inspect these vessels during the night time, and have refused to do so, feeling and knowing the necessity of having every chance to observe the conduct of those persons connected with the vessel.

I would state that the British steamship *Laughton* became infected with yellow fever at the Regla wharves in November, the disease developing two days after her departure from Habana; there were 4 cases and 1 death. This information I have just received on her return to Habana.

Very respectfully, W. F. BRUNNER,
Sanitary Inspector, U. S. M. H. S.

The SUPERVISING SURGEON-GENERAL,
U. S. Marine-Hospital Service.

Mortality of the city of Habana for the week ended Thursday, December 22, 1898.

Cause of death.	Total.
Yellow fever	1
Enteric fever	18
Pernicious fever	21
Malarial fever	42
Diphtheria	1
Dysentery	28
Enteritis	68
Grippe	2
Starvation	1
Pneumonia	2
Tuberculosis	42
Deaths from all causes	387
Deaths in the military hospitals from yellow fever	1
Deaths in the city from yellow fever	0
Deaths in the civil hospitals from yellow fever	0
Annual ratio per 1,000	100.62

Sanitary report from Habana.

HABANA, CUBA, *December 30, 1898.*

SIR: The following report for the week ended Thursday, December 29, 1898, is respectfully submitted. From the mortality report it will be observed that the death rate is declining. There were 3 deaths from yellow fever, 1 occurred in a military hospital, the other 2 occurred in the city near the harbor. Two cases of smallpox were brought to this city yesterday from Barcelona, on the Spanish steamship *Buenos Ayres*, a vessel which will take Spanish soldiers back to Spain. I have not located where these cases were sent, although I am told that they were taken to the Reina Mercedes, a civil hospital.

A case of smallpox developed in the camp of the One Hundred and Sixty-first Indiana Regiment yesterday, and this office was called on for vaccine virus by the chief medical officer of the Seventh Army Corps, and as much virus as could be spared was sent him. These cases are the first that have appeared in Habana in several weeks, and I believe that the case in the American camp must have originated from contact with the country people. I would recommend that all soldiers returning to the United States be required to pass examination at this office. This examination has been carried out and has developed the fact that so far as the volunteers are concerned vaccination has not been required on enlistment.

Deaths from malarial fevers show an increase over those of the preceding week. I look for a decreased death rate during the next few months, which will be due to American control.

While the winter is somewhat advanced without any practical sanitary work having been performed, still the first four months of the year leave considerable time in which intelligent efforts well applied can be made toward sanitation that must have salutary effect on the health of the city. This work must be planned and begun immediately. The sanitary conditions here are unusually bad. A city which has in its streets and in some of its oldest buildings the filth of centuries and in which yellow fever has been endemic for one hundred and sixty-eight years presents no easy task even to the alert progressive American.

All of the military hospitals but one have been or will be abandoned by January 1. The filthiest one, San Ambrosio, located near Talla-

piedra Wharf has been untenanted for the past two weeks. This building must be destroyed.

Very respectfully,

W. F. BRUNNER,
Sanitary Inspector, U. S. M. H. S.

The SUPERVISING SURGEON-GENERAL,
U. S. Marine-Hospital Service.

Mortality of the city of Habana for the week ended Thursday, December 29, 1898.

Cause of death.	Total.
Yellow fever	3
Enteric fever	20
Pernicious fever	14
Malarial fever	76
Dysentery	12
Enteritis	70
Grippe	2
Pneumonia	11
Tuberculosis	39
Deaths from all causes	369
Deaths in the military hospitals from yellow fever	1
Deaths in the city from yellow fever	2
Annual ratio per 1,000	95.94

Sanitary reports from Santiago.

SANTIAGO DE CUBA, *November 26, 1898.*

SIR: I have the honor of informing you that owing to heavy rainfalls, and the stirring of the ground necessary for the repairing and building of the streets and roadways, malarial fevers of bad character have lately prevailed, increasing the mortality to a great extent. Sixty-two deaths have been reported for the week ending to-day, of which 33 were from malaria; remittent and typhomalaria taking the lead. Diarrhea still prevails among the poorer classes, and dropsy and anæmia cause many deaths. Many who were infected at Caney during the siege and bombardment have never been able to rally, and die. The Americans, as a rule, only suffer from intermittent fevers.

Respectfully,

H. S. CAMINERO,
Sanitary Inspector, U. S. M. H. S.

The SUPERVISING SURGEON-GENERAL,
U. S. Marine-Hospital Service.

SANTIAGO DE CUBA, *December 3, 1898.*

SIR: I have the honor to inform you that owing to important regulations, carried out for the sanitation of the city, the general health improves every day. The death rate is lower, only 40 deaths having been recorded for the week ending to-day. Of these, remittent and pernicious fevers head the list; diarrhea, interocolitis, and dysentery causing few deaths. Of course, the deaths are among the poorer classes and the negroes, in proportion of 1 white for every 5 colored. I am happy to state that enforcement of sanitary measures by General Wood is working wonders. The streets are swept daily, and new ones are replacing the old ones. No garbage is allowed to accumulate, and privies and water-closets are emptied and disinfected.

Respectfully,

H. S. CAMINERO,
Sanitary Inspector, U. S. M. H. S.

The SUPERVISING SURGEON-GENERAL,
U. S. Marine-Hospital Service.

SANTIAGO DE CUBA, *December 10, 1898.*

SIR: I have the honor of informing you that the sanitary condition of Santiago de Cuba is exceptionally good at present. The mortality, as I have mentioned in former reports, has gradually decreased, only 37 deaths having been reported for the week ending this day. Of these, by far the greater number are from malarial fevers and paludean caquexia; enteritis and diarrhea from bad nourishment also cause some deaths. Yellow fever has completely disappeared from Santiago, although inexperienced physicians belonging to the Army see it in all cases of fever they treat, but the cemetery records do not show any deaths from it.

Respectfully,

H. S. CAMINERO,
Sanitary Inspector, U. S. M. H. S.

The SUPERVISING SURGEON-GENERAL,
U. S. Marine-Hospital Service.

JAPAN.

Sanitary report from Yokohama.

YOKOHAMA, JAPAN, *December 9, 1898.*

SIR: I have the honor to forward herewith my regular report of infectious diseases in Japan for period November 18 to December 8, inclusive. It will be noticed that, with the exception of the still persisting epidemic, dysentery, the country is in remarkably good sanitary condition, the only district in which smallpox is present, in more than sporadic form, being the Ken of Awamori, at the extreme north of Nippon, and remote from any connection with shipping for foreign ports.

I am, sir, very respectfully your obedient servant,

STUART ELDRIDGE, M. D.,
Sanitary Inspector, U. S. M. H. S.

The SUPERVISING SURGEON-GENERAL,
U. S. Marine-Hospital Service.

[Inclosure.]

Report of infectious diseases in Japan from November 18 to December 8, 1898.

Locality.	Cholera.		Dysentery.		Smallpox.		Plague.	
	Cases.	Deaths	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Kioto Fu			56	13				
Osaka Fu			20	8				
Tokyo Fu			23	18				
Aichi Ken			44	13				
Akita Ken			29	5				
Awomori Ken			46	15	53	13		
Chiba Ken			177	42				
Fukui Ken								
Fukuoka Ken			2	6				
Fukushima Ken			50	21				
Gifu Ken			52	19				
Gumma Ken			51	21				
Hiogo Ken			132	38	1			
Hiroshima Ken			189	6				
Ibaraki Ken			49	28				
Ishikawa Ken			8	5				
Iwate Ken			135	55				
Kagawa Ken			58	21				
Kagoshima Ken			63	23				
Kanagawa Ken			69	18	1			
Kochi Ken			43	6				
Kumamoto Ken			223	38				
Miyagi Ken			51	22				
Miyazaki Ken			32	8				
Miye Ken			50	6				
Nagano Ken			189	68				
Nagasaki Ken			132	26	1			
Nara Ken			1	1				
Niigata Ken			122	95				
Oita Ken			52	18				
Okayama Ken			24	9				
Okinawa Ken			16	4				
Saga Ken			7	5				
Saitama Ken			75	17				
Shidzuoka Ken			190	41				
Shiga Ken			17	5				
Shimane Ken			99	37				
Tochigi Ken			44	18				
Tokushima Ken			29	16				
Tottori Ken			4	3	3			
Toyama Ken								
Wakayama Ken			4	1				
Yamagata Ken								
Yamaguchi Ken			81	15				
Yamanashi Ken			189	60				
Yehime Ken			49	15				
The Hokkaido					8			
Taiwan (Formosa)			(a)					

a No report.

Infectious diseases in Japan in 1895, and measures proposed by the central sanitary bureau.

[Compiled in this Bureau from the report of the central sanitary bureau of the Imperial Japanese Government, 1895.]

The total number of cases of infectious disease in Japan during the year 1895 was 152,443, of which 64,856 proved fatal, showing a ratio of 43.54 deaths per 100 cases. When compared with the preceding year, the number of cases had decreased by 57,775, while the number of deaths had increased by 14,116. This decrease of cases is attributable to the fact that there was no epidemic of dysentery, which had been very prevalent in the preceding year, and the increase of deaths to the fact that there was a great prevalence of cholera. The details relating to each of the six infectious diseases are given as follows:

Cholera.—During the months of February and March of the year 1895 it was reported that some cases of diarrhea had appeared in the Japan-

ese army fighting in China just at the time when they captured the bay of Ikaiyei, but no official report was made, and there were no means of ascertaining whether they were really of an infectious nature. It is historically true, however, that epidemic diseases almost inevitably follow war, and it was considered necessary to institute preventive measures. While preparations to meet a possible emergency were in progress it was reported on March 19 that some cases of cholera had appeared at the port of Moji, in Fukuoka Ken. A counselor of the home department was immediately sent to Hiroshima to consult with the superintendent of barracks sanitation and with the vice minister of the army. Deputies from the department were also sent to the two Ken of Yamaguchi and Fukuoka for consultation with the governor as to preventive measures and for investigation of the disease.

On March 28 a report was received that a few cases of cholera had appeared in the port of Ujina, in Hirosbima Ken, and also among the Japanese troops stationed in Kiushu (China) and on Hoko Island. In spite of strict enforcement of the quarantine regulations by the department of the army and the careful execution of preventive measures at home by the home department, cholera penetrated into the country, and spread so rapidly as to cause more than 55,000 cases and 40,000 deaths. The spread of the disease was greatly facilitated by the movements of troops returning from China and by the increase in the means of railway communication throughout the country. That it did not cause a more severe epidemic was undoubtedly due to the quarantine measures enforced at the ports and the preventive measures carried out within the country.

The distribution of cases and deaths was as follows:

Prefectures.	Cases.	Deaths.
Osaka	7,195	5,564
Hiroshima	3,910	2,957
Hiogo	3,662	2,822
Toyama	4,351	2,697
Tokyo	3,424	2,597
Okayama	2,941	2,004
Kagawa	2,323	1,503
Miyagi	2,238	1,595
Fukuoka	2,138	1,464
Total	32,182	23,203

The other prefectures in which there were more than 1,000 cases each were Kioto, Nagasaki, Ibaraki, Yamagata, Tottori, Yamaguchi, Ehime, and Kochi.

Enteric fever.—The total number of cases of enteric fever during the year 1895 was 37,015, of which 8,401 proved fatal, showing an increase of 348 in the number of cases and 347 in the number of deaths.

The distribution of cases and deaths was as follows:

Prefectures.	Cases.	Deaths.
Gifu	1,867	298
Nagano	1,830	381
Fukuoka	1,598	389
Tokyo	1,585	415
Niigata	1,526	434
Total	8,406	1,917

The other prefectures in which there were more than 1,000 cases in each were Gumma, Hiogo, Saitama, Chiba, Tochigi, Aichi, Shidzuoka, Fukushima, Yamagata, and Kagawa.

Dysentery.—The number of cases of dysentery in 1895 greatly decreased. There were only 52,711 cases in all, of which 12,959 proved fatal, while in the two preceding years there were between 150,000 and 160,000 cases. The distribution of cases and deaths in 1895 was as follows:

Prefectures.	Cases.	Deaths.
Kagoshima	4,421	826
Kumamoto	3,882	684
Niigata	2,597	446
Shimane	2,394	679
Okayama	2,341	709
Fukuoka	2,320	455
Hiroshima	2,278	744
Total	20,233	4,543

The other prefectures which had more than 1,000 cases each were Osaka, Hiogo, Aichi, Shidzuoka, Shiga, Gifu, Akita, Fukui, Ishikawa, Toyama, Yamaguchi, Tokushima, Kagawa, Ehime, Kochi, and Miyazaki.

Diphtheria.—Diphtheria had hitherto shown an annual increase, but its virulence suddenly abated in 1895. There were 6,100 cases in the whole country, of which 3,025 proved fatal, showing an increase of 792 in the number of cases and 122 in the number of deaths as compared with the preceding year. In spite of the increase in the number of cases the death rate has greatly decreased. The number of deaths per 100 cases was 54.69 per cent in 1894 and in 1895 only 49.59 per cent. The greatest decrease in the death rate was in Tokyo, where in 1894 the rate was 56.16 per cent, and in 1895, 28.91 per cent, a decrease of nearly 50 per cent.

The distribution of cases and deaths was as follows:

Prefectures.	Cases.	Deaths.
Tokyo	806	233
Shidzuoka	574	335
Ehime	422	177
Hiogo	289	143
Iwate	251	119
Osaka	246	108
Kioto	234	91
Miye	208	122
Total	3,030	1,328

The other prefectures having more than 100 cases in each were: Kanagawa, Niigata, Gumma, Shiga, Gifu, Nagano, Miyagi, Fukuoka, Awomori, Akita, Okayama, Fukushima, and Hokkaido.

The decrease in the death rate as above mentioned should be attributed to the efficiency of the treatment by means of serum.

Typhus fever.—The total number of cases of typhus fever was 186, of which 49 proved fatal, showing an increase of 47 in the number of cases, and 16 in the number of deaths, as compared with the preceding year. The prefecture which had the greatest number of cases was Hiogo, where more than one-third of the total number of cases occurred.

Smallpox.—The virulence of this disease greatly decreased during the year 1895, the number of cases in that year being about one-half of that of the preceding year. The prefectures in which the disease prevailed more or less were two Ken only, viz, Chiba and Yamanashi, where there were rather more than 400 cases, while no other prefecture had more than 100 cases.

Quarantine operations.

Ports.	Number of days enforced.	Number of ships inspected.				Total.
		Japanese ships.		Foreign ships.		
		Disinfected.	Inspected.	Disinfected.	Inspected.	
Yokohama	a 252	17	25	5	5	52
Kobe	252	20	142	2	58	222
Nagasaki	252	31	65	2	33	131
Shimonoseki	252	48	431	1	19	499
Total		116	663	10	115	904

a April 10 to December 17.

Treatment of cholera and dysentery—Proposed investigation.—On February 5 instructions were given to the sanitary society of Japan that the causes of dysentery, as well as the measures relating to its treatment, should be investigated in the institution for the investigation of epidemic diseases and the results reported. Similar instructions were issued for the investigation of cholera.

Advancement of bacteriological education.—On April 17 a message was forwarded by the director of the central sanitary bureau to every fu and ken respecting the advancement of bacteriological education and its importance to national sanitation. At the institution for the investigation of epidemic diseases, a special regulation had been made in 1894, by which 5 or 6 students were allowed to enter on a term of instruction, and the number was now increased to 20, for the purpose of disseminating bacteriological knowledge.

Vaccination.—The first essential in vaccination is to obtain a supply of pure lymph. The manufacture of lymph has been much abused, and its quality has deteriorated steadily since it has been left in the hands of private individuals. It is, therefore, advisable that it should be prepared at a national establishment, where its quality may be actually tested and examined. A resolution was, therefore, formulated relating to the establishment of a national vaccine farm. This was presented to the cabinet on November 22.

Serum therapy.—The efficiency of the treatment of diphtheria with serum has been widely acknowledged, but the home manufacture of serum is becoming more and more abused and the imported article is less efficient, though very high in price. Diphtheria is, however, spreading yearly, and the demand for serum has greatly increased. It is, therefore, considered necessary to establish a serum institute at the national expense. A resolution to that effect was presented to the diet on December 7, 1895.

Examinations for the practice of medicine.—The examinations for medical practitioners were held in Tokyo, Kioto, and Nagasaki. The total number of candidates for the primary examination was 2,636, of whom 227 passed; 1,518 for the final examination, of whom 263 passed, and 156 for examination in dentistry, of whom 22 passed.

Number of cases and deaths of infectious diseases during the ten years from 1886 to 1895, inclusive.

Year.	Cholera.		Enteric fever.		Dysentery.		Diphtheria.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
1886	155,923	108,405	66,224	13,807	24,326	6,839	3,265	1,465
1887	1,228	654	47,449	9,813	16,149	4,257	2,741	1,429
1888	811	460	43,600	9,211	26,815	6,576	2,582	1,450
1889	751	431	35,849	8,623	22,873	5,970	2,669	1,495
1890	46,019	35,227	34,736	8,464	42,633	8,706	2,448	1,438
1891	11,142	7,760	43,967	9,614	46,358	11,208	3,429	1,974
1892	874	497	35,636	8,529	70,842	16,844	4,359	2,531
1893	633	364	34,069	8,183	167,305	41,282	5,726	3,205
1894	546	314	36,667	8,054	155,140	38,094	5,308	2,903
1895	55,144	40,154	37,015	8,401	52,711	12,959	6,100	3,025
Total	273,071	194,266	415,212	92,699	625,152	152,735	38,627	20,915
Average	27,307	19,427	41,521	9,270	62,515	15,274	3,863	2,092

Year.	Typhus fever.		Smallpox.		Grand total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
1886	8,225	1,577	73,337	18,676	331,300	150,769
1887	2,487	448	39,779	9,967	109,833	26,568
1888	1,131	207	4,052	853	78,991	18,757
1889	300	88	1,324	328	63,766	16,935
1890	251	67	296	25	126,383	53,927
1891	1,194	203	3,608	721	109,608	31,480
1892	281	62	33,779	8,409	145,771	36,872
1893	228	56	41,898	11,852	249,859	64,942
1894	139	33	12,418	3,342	210,218	52,740
1895	186	49	1,287	268	152,443	64,856
Total	14,422	2,790	211,778	54,441	1,578,262	517,846
Average	1,442	279	21,178	5,444	157,826	51,785

Ratio of deaths from infectious diseases during the ten years from 1886 to 1895, inclusive.

Year.	Cholera.	Enteric fever.	Dysentery.	Diphtheria.	Typhus fever.	Smallpox.	Total.
1886	69.52	20.85	28.11	44.87	19.17	25.47	45.51
1887	53.26	20.68	26.36	52.13	18.01	25.06	24.19
1888	56.72	21.13	24.52	56.16	18.30	21.05	23.75
1889	57.39	24.05	26.10	56.01	29.33	24.77	26.56
1890	76.55	24.37	20.42	58.74	26.69	8.45	42.67
1891	69.65	21.87	24.18	57.57	17.00	19.98	28.70
1892	56.86	23.93	23.78	58.06	22.06	24.89	25.29
1893	57.50	24.02	24.67	55.97	24.56	28.29	25.99
1894	57.51	21.97	24.56	54.69	23.74	26.91	25.09
1895	72.82	22.70	24.59	49.59	26.34	20.82	42.54
Total	62.78	22.56	24.73	54.38	22.52	22.57	31.03

WEST INDIES.

Sanitary report from Guadeloupe.

CONSULATE OF THE UNITED STATES,
Guadeloupe, West Indies, December 3, 1898.

SIR: I have the honor to request that a supply of blank forms and addressed envelopes be sent to me to enable me to comply with the instructions of Department Circular of October 31, "Weekly Sanitary Reports."

There is no regular publication of vital statistics in this colony, but statements of births, deaths, and marriages are published, irregularly, in the local newspapers.

I have been collecting these scattered data for some time, with the intention of making a report thereon.

I now inclose a tabular statement of the marriages, births, and deaths in this city. It will be noticed that there are breaks in this table, as from May 15 to June 13, June 26 to July 11, etc., I have not been able to supply these deficiencies nor to discover the cause of the deaths.

The period covered is from April 11 to November 27, with omissions of sixty-three days. Two main facts are to be noticed: (1) The legitimate births are but 27.72 per cent of the total births. The illegitimate births being 72.28 per cent. (2) The deaths exceed the births by 66, or in the proportion of nearly 1.5 deaths to 1 birth.

I will try to procure from the chief military physician of the port more detailed reports if desired.

I have the honor to be, sir, your obedient servant,

LOUIS H. AYME,
United States Consul.

Hon. ASSISTANT SECRETARY OF STATE.

[Inclosure.]

Tabular statement of marriages, births, and deaths, Pointe-a-Pitre, Guadeloupe, April 11 to November 27, 1898.

Date.	Marriages.	Births.		Deaths.
		Legitimate.	Illegitimate.	
1898.				
April 11 to April 17				9
April 18 to April 24	1	1	4	7
April 25 to May 8	2	3	10	15
May 9 to May 15		2	4	7
June 13 to June 26		5	12	20
July 11 to July 17		2	3	7
July 18 to July 24	3	3	5	5
August 8 to August 14	1	1	1	11
August 21 to August 28	1	3	4	9
August 29 to September 4		2	4	8
September 5 to September 11	1		3	7
September 12 to September 18			3	7
September 19 to September 25		1	4	11
September 26 to October 2		1	4	11
October 3 to October 9	1	1	6	11
October 10 to October 16	1	2	4	11
October 17 to October 23	2	1	2	5
October 24 to October 30	4	3	11	9
October 31 to November 6		2	5	7
November 7 to November 13			2	5
November 14 to November 20	1	2	3	8
November 21 to November 27	2	3	5	13
Totals	20	38	99	203

RECAPITULATION.

Period from April 11 to November 27, less sixty-three days.

Population, estimated	17,100
Marriages	20
Births	137
Deaths	203
Excess of deaths over births	66

STATISTICAL REPORTS.

BERMUDA.—Two weeks ended December 16, 1898. Estimated population, 15,013. Total number of deaths, 1. Three cases of enteric fever.

BRITISH COLUMBIA—*Vancouver.*—Two weeks ended December 16, 1898. Estimated population, 25,000. Total number of deaths, 10. No contagious diseases reported.

GERMANY—*Stuttgart.*—Month of September, 1898. Estimated population, 171,125. Total number of deaths, 181, including scarlet fever, 1, and 18 from phthisis pulmonalis.

GREAT BRITAIN—*England and Wales.*—The deaths registered in 33 great towns in England and Wales during the week ended December 17, correspond to an annual rate of 16.6 a thousand of the aggregate population, which is estimated at 11,218,378. The highest rate was recorded in Nottingham, viz, 21.9, and the lowest in Derby, viz, 10.9.

London.—One thousand four hundred and twenty-three deaths were registered during the week, including measles, 31; scarlet fever, 6; diphtheria, 40; whooping cough, 26; enteric fever, 19, and diarrhea and dysentery, 13. The deaths from all causes correspond to an annual rate of 16.5 a thousand. In greater London 1,886 deaths were registered, corresponding to an annual rate of 15.2 a thousand of the population. In the "outer ring" the deaths included 21 from diphtheria, 2 from measles, and 10 from whooping cough.

Ireland.—The average annual death rate represented by the deaths registered during the week ended December 17 in the 23 principal town districts of Ireland was 23.9 a thousand of the population, which is estimated at 1,007,798. The lowest rate was recorded in Portadown, viz, 6.2, and the highest in Queenstown, viz, 40.2 a thousand. In Dublin and suburbs 169 deaths were registered, including diphtheria, 3; enteric fever, 6; scarlet fever, 1, and whooping cough, 5.

Scotland.—The deaths registered in 8 principal towns during the week ended December 17 correspond to an annual rate of 19.4 a thousand of the population, which is estimated at 1,568,536. The lowest mortality was recorded in Perth, viz, 10.2, and the highest in Aberdeen, viz, 22.2 a thousand. The aggregate number of deaths registered from all causes was 584, including diphtheria, 6; measles, 8; scarlet fever, 12, and whooping cough, 16.

MALTA.—Two weeks ended November 15, 1898. Estimated population, 177,745. Total number of deaths, 235, including 9 from enteric fever.

ST. HELENA.—Six weeks ended November 29, 1898. Estimated population, 4,000. Total number of deaths, 8.

MORTALITY TABLE, FOREIGN CITIES.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—								
				Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Acapulco	Dec. 17	6,500	1									
Bahia	Nov. 26	200,000				2						
Do	Dec. 3	200,000				1						
Barranquilla	Dec. 9	40,000	18		1							
Belfast	Dec. 10	304,610	148					7			1	
Belize	Dec. 23	13,000	7									
Birmingham	Dec. 10	510,343	179					3	1	1		2
Bluefields	Dec. 17	3,018	2									
Bombay	Nov. 29	821,764	a616			1		2			4	
Bradford	Dec. 10	231,260	72					1				1
Bristol	do	316,900	126					1		1		6
Brussels	Dec. 3	531,024	180					1	1		5	1
Calcutta	Nov. 12	681,560	391	2							1	1
Do	Nov. 19	681,560	419								1	
Callao	Nov. 24	25,000	20								1	
Do	Dec. 4	25,000	24									
Christiania	Dec. 10	207,000	78						1			
Colombo	Nov. 12	130,000	82								1	
Do	Nov. 19	130,000	61					2				
Colon	Dec. 21	8,000	0									
Crefeld	Dec. 10	110,000	31									
Curacao	Dec. 17	29,000	9									
Dundee	Dec. 10	164,575	70						1			2
Demerara	Nov. 5	35,000	45									
Do	Nov. 12	35,000	45									
Do	Nov. 19	35,000	64					1				
Do	Nov. 26	35,000	58									
Dublin	Dec. 10	349,574	170					4				3
Edinburgh	do	295,628	139				1	1	2	1	3	3
Glasgow	do	724,349	283					6	3	2	5	8
Gothenburg	Dec. 3	120,552	33					2	1			
Guatemala	Dec. 12	65,000	36					3				
Halifax	Dec. 24	38,700	20							1		
Hamilton, Bermuda	Dec. 13	16,000	0									
Do	Dec. 20	16,000	1									
Kingston, Canada	Dec. 23	51,000	7									
La Paz, Mexico	Dec. 10	5,000	0									
Leghorn	Dec. 11	104,372	44					1				
Leith	do	76,277	20								2	1
Liege	Dec. 3	168,241	54					1				
Liverpool	Dec. 10	668,645	273			1		5	3	4	2	5
London	do	6,408,321	1,924					31	16	59	32	27
Lyons	Dec. 3	466,028	179					7				
Madras	Nov. 25	452,518	b357	5							5	
Manchester	Dec. 10	541,296	201					1	1	3	13	
Maracaibo	Dec. 3	50,000	18									
Do	Dec. 10	50,000	16									
Do	Dec. 17	50,000	25									
Matamoras	Dec. 16	16,304	7									
Moscow	Dec. 3	1,000,000	518			11		6	6	11	4	2
New Castle on Tyne	Dec. 10	223,000	79						2		3	1
Ottawa	do	60,000	13							1		
Do	Dec. 17	60,000	31					1		1		
Paris	Dec. 10	2,511,955	863					5	1	7		3
Port au Prince	Nov. 21	60,000	18									
Do	Nov. 28	60,000	23									
Do	Dec. 5	60,000	18									
Do	Dec. 12	60,000	14									
Do	Dec. 19	60,000	17									
Puerto Cabello	Dec. 17	14,000	0									
Rio de Janeiro	Dec. 11	750,000	238		3	3						3
Do	Dec. 18	750,000	261		2	8		2			2	1
Rotterdam	Dec. 10	306,439	122					1		2	1	
St. Georges, Bermuda	do	2,150	0									
Do	Dec. 17	2,150	0									
St. Johns, West Indies	Dec. 10	15,000	19									
St Stephen, New Brunswick	Dec. 24	3,000	1									
Sheffield	Dec. 10	360,857	115					8	1	5		4
Southampton	do	100,886	39							7	1	3
South Shields	do	98,922	32								5	1
Trapani	Dec. 3	45,095	14									
Venice	do	169,001	64					2		2		

a Plague, 43. b Plague, 1.

MORTALITY TABLE, FOREIGN CITIES—Continued.

Cities.	Week ended.	Estimated population.	Total deaths from all causes.	Deaths from—								
				Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Enteric fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Vera Cruz	Dec. 15	30,000	51	.....	4	.....	.....	.....	.....	.....	.....	.....
Do	Dec. 22	30,000	43	.....	9	.....	.....	.....	.....	.....	.....	.....
Windsor	Dec. 24	3,000	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Winnipeg	do	45,000	.....	.....	.....	.....	.....	.....	.....	1	.....	.....

By authority of the Secretary of the Treasury:

WALTER WYMAN,
Supervising Surgeon-General U. S. Marine-Hospital Service.

SUPPLEMENT.

Public Health Reports

Treasury Department, United States Marine-Hospital Service. Published in accordance with act of Congress approved February 15, 1893.

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Précis upon the diagnosis and treatment of smallpox.

In view of the prevalence of smallpox and the number of inquiries relating thereto, the following précis upon the subject has been prepared in this Bureau under the direction of the Surgeon-General of the United States Marine-Hospital Service, and is published with a view to distribution in States and localities where it may be of service. Smallpox is a disease easily prevented by vaccination, and the preparation of glycerinized vaccine lymph has now been brought to such perfection that there should be no fear of untoward results in its use. The prevention of the spread of smallpox is readily effected by vaccination and other measures, and is properly the care of State and local health authorities. The United States Marine-Hospital Service, upon the request of the health authorities or governor of a State or Territory, is ready to send experienced officers to determine the diagnosis when the latter is in doubt and to offer such advice as may be necessary as to the preventive measures which should be adopted. As has been the custom hitherto the Service assistance is limited as above, except under very unusual circumstances, and then only to prevent the spread of the disease from one State into another.

DEFINITION.

Smallpox is an acute contagious, infectious disease, characterized by an eruption which passes through the stages of macule, papule, vesicle, and pustule, ending in desiccation and desquamation.

ETIOLOGY.

The contagious principle, probably a microbe, has not been discovered, but it is contained in the exhalations of the skin and lungs and especially in the pustule and dried material following desiccation and desquamation, and may live for months on clothing or furniture. The contagium is tenacious, and may be conveyed by persons and by fomites, such as hair, clothing, paper, letters, furniture, etc., or it may spread through the air by means of the wind blowing the dust containing the virus. The disease is probably contagious during the first four days previous to the appearance of the eruption, but this has not been proved. A few persons seem to possess a natural immunity to the disease. No age, race, sex or climate is exempt. It attacks the fœtus in utero when the mother has the disease. It is more common among the colored races, probably on account of their condition of living in small, crowded rooms, with slight regard for cleanliness. It is worse in cold than in warm weather because of closed houses and aggregation of people.

SYMPTOMS.

True smallpox (variola vera) incubation.—The period of incubation varies from seven to twenty days, the average being twelve days. Inoculation, which might occur accidentally in obvious ways, shortens the time to seven or eight days. During this period there are usually no symptoms—sometimes a little malaise or gastric disturbance.

Invasion.—This is sudden, beginning with a chill which may be followed by others, severe aching in the "small of the back," and sometimes the limbs; intense headache, vomiting, and fever 39.4 to 40°C. (103 to 104°F.). The pulse is rapid and strong. Convulsions may occur in children.

Eruption—Initial rash.—When this occurs it usually appears on the second day in the form of a diffused redness—the scarlatinal form—or of a macular eruption resembling measles. More rarely it may have the form of urticaria. It appears in about 13 per cent of cases (Osler), usually on the inner surface of the thighs, the lateral thoracic regions near the axilla, lower part of the abdomen, and occasionally on the extensor surfaces of the knees and elbows.

Distinctive eruption.—In the discrete or mild form small spots are seen on the third day on the forehead near the hair, around the mouth and on the wrists, and the temperature falls, which up to this time has been continuously high.

The eruption becomes general over the body in twenty-four hours, and at this stage the disease strongly resembles measles. On the fourth and fifth days of the disease the eruption is papular and the characteristic "shotty" sensation is obtained by passing the fingers over the skin. During the next twenty-four hours the papules become vesicles, with clear summits. From the sixth to the eighth day the vesicles

change to pustules with a slight depression in the center (umbilicated), each pustule being surrounded by a red border or halo. At the same time the temperature rises again, the secondary fever or *stadium suppurationis* and the general symptoms return. The pustules are especially thick on the face, which is much swollen and disfigured.

About twenty-four hours before its appearance on the skin the eruption develops on the mucous membranes of the respiratory and alimentary tracts, and may be seen on the soft palate, fauces, larynx, and trachea. The inner sides of the thighs and axiliary regions, the sites of the initial *rash*, are usually free from the characteristic eruption of smallpox.

Desiccation and desquamation.—After four or five days from their appearance (twelfth or thirteenth of the disease) the pustules begin to dry up. A few days later the scabs begin to fall off, first on the face and later on other parts of the body; the temperature falls to normal and convalescence begins.

Confluent form.—The initial symptoms are more intense, the eruption occurs a little earlier. The papules are discrete but the vesicles and pustules coalesce, especially on the face, hands, and feet, but usually remain discrete on the trunk. The temperature does not fall to the same degree on the appearance of the eruption as in the discrete form, and the secondary fever is higher, more prolonged, and attended by graver constitutional symptoms, such as swelling of the lymphatic glands, salivation, diarrhea, and delirium.

When death occurs it is usually in the stage of maturation, about the tenth or eleventh day. When recovery takes place, the process of desiccation and desquamation is complete in three or four weeks; sometimes it may extend to six or eight weeks.

Hemorrhagic smallpox.—This occurs in two forms:

(*a*) Purpura variolosa (black smallpox), in which the symptoms appear early and death may occur in from two to six days. Symptoms are the same, only more intense, and the eruption appears on the second or third day in the form of a diffuse hyperemic rash with punctiform hemorrhages, especially in the groins. The rash extends, the hemorrhagic spots increase in size, ecchymoses appear on the conjunctivæ, the skin may have a uniformly purplish hue and hemorrhages may occur from the eyes, nose, stomach, lungs, urethra, and uterus.

(a) The other hemorrhagic form (variola hemorrhagica pustulosa) progresses as in ordinary smallpox to the vesicular or pustular stage, when hemorrhages take place into the pocks or from the mucous membranes. The majority of cases in which bleeding from the mucous membranes takes place die in from seven to nine days. Hemorrhage into the pocks is frequently followed by recovery.

Varioloid.—This is the modified form of smallpox which occurs in persons who have been successfully vaccinated. It is none the less smallpox because of its modified form, and the most virulent form of smallpox may arise from exposure to varioloid.

Symptoms may be severe with temperature reaching 39.3° C. (103° F.), but usually they are mild. The eruption appears on the third or fourth day and the fever falls at once, and the patient feels comfortable. The papules are few in number, scattered, and may be limited to the face and hands. Vesiculation and suppuration take place rapidly and there is no secondary fever. The eruption does not pass through the regular stages, many of the vesicles disappearing without suppuration and scars seldom result.

Complications—Respiratory organs.—As a consequence of the eruption on the mucous membranes, laryngeal ulcerations with perichondritis and œdema of the glottis, bronchitis, lobular, and sometimes lobar pneumonia may occur.

Digestive system.—The eruption in the throat is sometimes followed by purulent otitis, parotitis, and ulceration of the pharynx. The spleen is nearly always enlarged and often the liver.

Circulatory system.—Except the slight degeneration of the muscular fiber, pathological changes in the heart are rare. Pericarditis sometimes occurs and occasionally endocarditis.

Nervous system.—Convulsions frequently occur in children, and delirium in adults which may end in fatal coma. Post-febrile insanity and occasionally epilepsy occur during convalescence. Neuritis, as in diphtheria, may affect the pharynx, or it may be multiple in the extremities. Hemiplegia and aphasia, the result of encephalitis, rarely occur.

Joints.—Arthritis, which may be suppurative, and necrosis of the bone are sometimes met with.

Skin.—Boils are frequent, acne, ecthyma, and local gangrene sometimes occur, and occasionally after desquamation a secondary eruption resembling smallpox (recurrent smallpox).

Urinary organs.—Albuminuria is not uncommon, but true nephritis is rare.

Special senses.—Catarrhal and purulent conjunctivitis is common in severe cases, leading sometimes to keratitis with ulceration, perforation, and loss of the eye. Iritis and choroiditis may also occur. Otitis media is an occasional complication from extension through the Eustachian tube.

DIAGNOSIS.

The disease must not be mistaken for measles, scarlet fever, chicken pox, impetigo contagiosa, syphilis, cerebro-spinal fever, typhus fever, or glanders. The severity of the attack, the group of symptoms, chill, backache, headache, vomiting, and high fever, 39 to 41° C. (102.2 to 105.8° F.) continuing three or four days and falling on the appearance of the eruption should excite suspicion of smallpox, especially when this disease is prevalent.

Measles.—In measles, the period of incubation is a little longer than in smallpox—about fourteen days. The stage of invasion more nearly

resembles a cold, with shivering rather than a definite chill, sneezing, redness of the eyes, running at the nose, and cough. The eruption occurs about the fourth or fifth day, and the condition of the patient is not much improved until the sixth day, when the eruption is well developed. By the fifth or sixth day at the latest the diagnosis can be made. The eruption of measles having no tendency to become vesicular and is only slightly papular.

Scarlet fever.—The period of incubation is much shorter, one to seven days—average four—and the stage of invasion is short, with high temperature and sore throat. The eruption appears early, on the second day, first on the neck and chest and spreads rapidly over the face and body, in the form of a bright red or scarlet rash, like erythema, with a slight tendency to the formation of papules. It gradually fades after two or three days. The tongue has a characteristic appearance—the "strawberry" or "raspberry" tongue, owing to the projection of the enlarged red papillæ through the coating on the tongue. Albuminuria is a common symptom.

Chicken pox—(*Varicella*).—This is more strictly a disease of children, affecting especially those under six years of age. The incubation period is rather longer than that of smallpox—ten to fifteen days. The initial symptoms are comparatively mild, with fever, vomiting, and pain in the back and legs. Sometimes convulsions occur in children. The eruption appears during the first twenty-four hours, on the back, chest, or face in the form of red papules which in a few hours become vesicles filled with a clear or turbid fluid. They are seldom umbilicated, are scattered, more superficial than the vesicles in variola, and the intervening skin is neither inflamed nor hyperemic. In three or four days the eruption dries up into scabs, which soon fall off leaving little or no scarring. Varioloid may be mistaken for this disease.

[The observation of the Marine-Hospital Bureau has been that in the majority of mistaken diagnoses with regard to smallpox the disease has been called chicken pox. Chicken pox is a contagious disease and many local health authorities require its isolation. Particularly when smallpox is prevalent, any case of supposed chicken pox should be isolated and guarded as if it were smallpox, at least until the diagnosis is proven beyond doubt.]

Impetigo contagiosa more nearly resembles chicken pox than smallpox. The eruption appears without constitutional symptoms—occasionally there are slight febrile disturbances and malaise coincident with the appearance of the eruption which is found on the face, scalp, hands, fingers, and sometimes the trunk, in the form primarily small, pin head sized vesicles or vesico papules, flat or slightly raised and rapidly enlarging into blebs of the size of a split pea, or finger nail containing clear fluid or pus. The eruption occurs in patches or groups as in herpes, the vesicles being at first discrete and usually umbilicated, but

later coalescing and as desiccation takes place forming large crusted patches.

Syphilis.—The eruption of syphilis is sometimes exactly like that of smallpox with umbilicated pustules. The history, with the absence or slight character of the fever and other constitutional symptoms, serve to make the differential diagnosis.

Cerebro spinal fever.—The temperature is usually not so high, extremely severe headache, especially in the back of the head, intolerence of light and sound, strabismus, delirium, coma, and the early appearance of stiffness with pain and contraction of the muscles of the neck and back characterize the disease.

Typhus fever.—In this disease, mental symptoms appear early, such as delirium, often maniacal, the temperature rises steadily, usually to the fifth day when it may reach 41.6° C. (106.88° F.) and the eruption appears about the third to the fifth day, first on the abdomen and chest, rapidly spreading to the extremities and face in the form of a fine irregular, dusky mottling as if beneath the skin, and distinct papular rose spots, some of which change to petechiæ from hemorrhage.

Glanders.—In glanders the eruption appears on the face and about the joints, at the same time there is ulceration, swelling, and a mucopurulent discharge from the nose. The period of incubation is short, three or four days.

VACCINATION.

The most efficient means for preventing the spread of smallpox is by vaccination. The protection, provided the virus is pure, is believed to be as complete against contagion as is that of smallpox against a second attack, though not of as long duration, but revaccination, whenever smallpox is prevalent in a community, will continue this protection indefinitely. Therefore, the first measure after isolation of a person suffering with smallpox is the immediate vaccination of all persons who have been exposed to the disease and *revaccination* in five or six days if there is no indication of the previous virus having been effective.

In order to secure pure vaccine the supply should be obtained from an accredited source, and as bovine virus only is now used the dangers which heretofore existed from arm-to-arm vaccination are eliminated. Glycerinized lymph only should be used.

The operation of vaccinating a person, although fairly well understood, may be briefly described as follows:

Usually the left arm above the middle third is selected although in some cases the wishes of the person receiving it may be consulted. The part to be vaccinated is bared and the skin rendered antiseptic by means of soap and water or alcohol, after which, if a needle or lancet is used it should first be passed through a flame or sterilized by means of alcohol, and the part scarified in one or more places; the virus is then rubbed in. Of course, it is understood that the same needle shall

be used on but one person, and if a lancet is used it should be sterilized for each case. If the vaccination has been successful it will be found that in the course of three or four days a small papule will appear, which soon after becomes vesicular, and is surrounded by a circumscribed areola; this gradually increases until the seventh or eighth day; in the meantime a crust forms which in due course falls off, leaving the characteristic scar resembling the pits of smallpox, the whole process occupying about three weeks.

Due care should be exercised to prevent the vaccination from being irritated or the "seal" from being broken and to prevent the wound from becoming infected. A vaccine shield is best for this purpose, and it is recommended that either one provided by the dealers or improvised be used, but if a vaccine shield is not used care should be taken, as above stated, to prevent the breaking of the "seal" and undue rubbing of the part by the clothing. Adhesive plaster should not be used for this purpose.

In the communities where compulsory vaccination is not required for children going to public schools it will frequently be found that a large proportion of the pupils, unless an epidemic of the disease has recently occurred, have not been vaccinated, and it is among these that smallpox is more apt to be spread.

A thorough house-to-house inspection, isolation, and vaccination will soon put a stop to the epidemic.

The truth about vaccination.—Dr. Bizzozoziro, in a recent lecture delivered at Rome, recalled strikingly to his audience the success of vaccination in Germany. He said: "Germany stands alone in fulfilling in a great measure the demands of hygiene, having in consequence of the calamitous smallpox epidemic of 1870–71 enacted the law of 1874, which makes vaccination obligatory in the first year of life, and revaccination obligatory at the tenth year. What was the result? With a population of 50,000,000, having in 1871 lost 143,000 lives by smallpox, she found by her law of 1874 the mortality diminished so rapidly that to day the disease numbers only 116 victims a year. These cases moreover occur almost exclusively in towns on her frontier. If it were true that a good vaccination does not protect from smallpox, we ought to find in smallpox epidemics that the disease diffuses itself in the well vaccinated no less than in nonvaccinated countries. But it is not so. In 1870–71, during the Franco-German War, the two peoples interpenetrated each other, the German having its civil population vaccinated optionally, but its army completely vaccinated, while the French (population and army alike) were vaccinated perfunctorily. Both were attacked by smallpox. The French army numbered 23,000 deaths by it, while the German army had only 278, and in the same tent breathing the same air, the French wounded were heavily visited by the disease, while the German wounded, having been vaccinated, had not a single case."

HOUSE-TO-HOUSE INSPECTION.

When the disease becomes epidemic a house-to-house inspection is necessary to prevent the spread of smallpox, not only to discover isolated cases but to vaccinate and revaccinate all persons who have been exposed to the disease as well as those who have not previously been vaccinated within recent years (say two years). The house-to-house inspection may be advisable before the disease is known to be epidemic.

ISOLATION.

(1) Suspects: Cases of illness suspected of being smallpox or chicken pox should be isolated and kept away from others until the character of the illness is determined. This applies equally to those who have been exposed to smallpox, having a fever at the end of the period of incubation, as to those suffering from an eruption.

(2) Cases: When the character of illness is determined to be smallpox, isolation of the patient should be continued so that there will be no danger of the disease spreading from the case. Isolation is best accomplished in places specially prepared for the purpose. A hospital or lazaretto for smallpox should be located at least 2,000 feet distant from habitations, and to the leeward of the prevailing winds. It is possible under the most favorable circumstances to isolate a smallpox case in a house or residence, but it is not to be recommended. Accidents usually attendant on such isolation are responsible for new foci of the disease among the adjacent residents.

(3) Provisions for treatment of cases: On removal of cases to a hospital or lazaretto, ample provision should be made for their care and treatment, and the patients should be provided with as many comforts as possible. In fact, these comforts are required by reason of the nature of the disease, and neglect of proper care will result fatally.

Cases of varioloid, or smallpox modified by vaccination, should always be treated in the same manner as the virulent type; these cases are equally as dangerous, if not more so, from a sanitary standpoint.

As soon as a case of smallpox has been removed from a house or apartment, immediate steps should be taken to prevent the spread of the disease through these agencies. A disinfection of all infected material should be done at once. Those persons who have been in direct contact with the case, or have been exposed to the infection otherwise, should be immediately vaccinated, unless they have been protected by a recent successful vaccination, or have had the disease.

Persons who have been exposed to the disease should be considered under two classes—

(1) Those who have been exposed but once to the infection and are immediately vaccinated. These should be kept under observation until there are unmistakable evidences of the success of vaccination, when they can be discharged from further surveillance.

(2) Persons who have been exposed to smallpox and several days (over four) have elapsed before vaccination. These should be kept under observation until the period of incubation has passed. The period of incubation should be considered to date from the time of vaccination. The protective effects of vaccination in these cases are of doubtful value.

Persons who have been exposed to smallpox should be kept under the observation of a physician who should inspect them at least once daily during the period of incubation. These persons are not infectious until after the initial fever appears, and then slightly so in the first forty-eight hours, that is to say, before the eruption makes its appearance on the mucous membrane and skin.

Suspects should be kept under observation. Under certain circumstances this may best be done by segregating them in observation camps or hospitals. Under other circumstances it may be done by surveillance at their residences.

Cases of smallpox under treatment should not be discharged until the process of desquamation is complete. This is variable, depending entirely on the case. A safe rule is to await the disappearance of the peculiar red specks at the bottom of the pits or scars. So long as this condition is present, desquamation is going on.

On the termination of the case in recovery, the patient should be given an antiseptic bath—1–1000 bichloride of mercury—followed by a second bath of water, and then provided with sterile clothing.

Cases dead of the disease should be encased in sheets saturated with a strong antiseptic, preferably bichloride of mercury—1–500—inclosed in a metallic casket hermetically sealed and immediately buried. Cremation is also recommended. It is needless to add, funerals, public or private, are interdicted.

DISINFECTION.

The measures to be put in practice for disinfection are the same in general as those applicable to other infectious diseases, and may be considered under the following:

(1) Disinfection of infected premises.
(2) Disinfection of the person and his belongings.
(3) Disinfection of vehicles.
(4) Disinfection of merchandise.
(5) Disinfection of the mails.

Premises.—On the removal of a patient from a house or apartment it is always best to have the contents of the room remain in situ while a preliminary disinfection is given. The object of this is to reduce the danger in handling the infected articles preliminary to their final and complete disinfection.

Room and contents.—This may be accomplished by one of the following methods:

(1) By formaldehyd gas in not less than (*a*) 4 per cent strength for not less than six hours; (*b*) by exposure to sulphur dioxide for twenty-

four hours, 4 pounds of sulphur to each 1,000 cubic feet, plus due allowance made for waste.

At the end of the time specified, the apartment and its contents should be arranged for a final disinfection. (*a*) The room should be made as air tight as possible. (*b*) Clothing, bedding (exclusive of pillows and mattresses), hangings, and carpets should be so arranged as to permit all surfaces to be freely exposed to the action of the gas, and then exposed to either (1) formaldehyd gas in not less than a 4 per cent per volume strength, for not less than twelve hours, or by (2) sulphur dioxide for twenty-four hours by burning not less than 4 pounds of sulphur to each 1,000 cubic feet, plus due allowance made for waste.

Disinfection of a room can be also performed by wetting the walls, ceiling and floor with an efficient germicidal solution.

It is impracticable to thoroughly disinfect feather pillows and feather beds by either formaldehyd or sulphur dioxide. It is recommended that where there is no apparatus for disinfecting fabrics, etc., these should be destroyed by burning. Where it is practicable to do so it is recommended that clothing, bedding, carpets, articles of furniture and the like be disinfected by—

(*a*) Exposure to steam at a temperature of 100 to 102° C. for thirty minutes.

(*b*) Boiling, the articles to be completely submerged.

(*c*) Saturation with an efficient germicidal solution.

(*d*) By thoroughly wetting the surfaces of the article with a 40 per cent acqueous solution of formaldehyd, and confining it in a small closed space for not less than twelve hours (applicable for upholstered furniture). The commercial preparations known as formol, formalin, formalose, are 40 per cent solutions of formaldehyd.

(*e*) The application of formaldehyd gas in a special apparatus for this purpose.

Disinfection of a person and his belongings.—As previously referred to under the head of isolation, cases recovered from smallpox should be given a bath with an efficient germicide.

Clothing, bedding, and articles used in the care and treatment of the sick should invariably be disinfected in the manner as outlined, or be destroyed by fire.

The dejecta of smallpox patients should be disinfected by bichloride of mercury solution 1–500, carbolic acid solution 1–40, trikresol in solution 1–100, solution of chlorinated lime, or milk of lime.

Infected articles should never be thrown from railway coaches in transit or otherwise, nor should any article of this character be thrown overboard from vessels.

Disinfection of vehicles infected with smallpox should be performed after the following method:

Railway coaches.—For the day coach, dining car, tourist sleeper, parlor car, formaldehyd gas, applied by means of an autoclave in a 4

per cent per volume strength, the time of exposure not less than twelve hours.

For Pullman, Wagner, and other sleeping cars.—Formaldehyd gas, applied by means of an autoclave at a 4 per cent per volume strength, the time of exposure not less than 12 hours.

Arrangements of the day coach for disinfection.—All openings of the car should be closed as tightly as possible, especially the ventilators; these are best closed by means of waste. All carpets along the aisles should be laid across the top of the seats. If the car is provided with sash curtains they should be pulled down and hooked over the windows. The curtains of the seats should be shoved slightly away from the backs so that all the surface can be reached by the gas.

Water-closets, lockers, and storeroom should be opened. All apertures to be closed with waste or some other similar material. The gas should be introduced into the car by one of two ways: By the keyhole in the car door or through the hopper of the water-closet. If the car is badly infected it is always best to give a preliminary disinfection before doing all that has been outlined above. Under these conditions the car is left just as it is, apertures closed, and a strong percentage of gas thrown in and allowed to remain for at least six to eight hours before it is arranged for the final disinfection. This procedure will be sufficient to sterilize the contents and surfaces of the car, and renders this arrangement less dangerous to the operator.

The immigration coach.—If the coach is constructed with a view to easy cleansing, the interior can be given a cleaning with formaldehyd gas in not less than 2 per cent per volume strength, or by sulphur dioxide for 24 hours, by burning 4 pounds of sulphur to each 1,000 cubic feet, and after this a mechanical cleansing of the floors and water-closets, to be followed by a thorough douching with a strong disinfecting solution, preferably a solution of bichloride of mercury.

Sleeping cars.—The same general rules apply to these as for the day and immigration coach. The berths must be let down, all pillows taken out from under the seats; the mattresses and pillows so arranged that all surfaces may be thoroughly exposed, curtains suspended from the curtain poles; the carpets removed from their fastenings and placed over the backs of the seats or suspended by some means in the aisle. The lockers, closets, etc., to be opened. All the articles therein to be arranged so as to be exposed to the gas. Articles of food, not hermetically sealed, should, after the completion of the disinfection, that is, after the exposure of the goods, be destroyed.

In most cases it may be necessary to neutralize the formaldehyd gas by ammonia. This can be readily done by sprinkling a sufficient quantity on the floor of the car and allowing it to remain about one hour; about twice the quantity of ammonia should be used for the formaldehyd solution.

Sulphur is not recommended on account of the destructive effect upon fabrics.

Disinfection of merchandise.—As a rule, new merchandise is seldom, if ever infected, and if so, only the exterior. A surface disinfection is all that is required. The best method is to place the merchandise in a closed space and arranged in such a manner as to allow the free exposure of all the surfaces to the action of the disinfectant and then apply formaldehyd in not less than a 4 per cent per volume strength for not less than six hours or by sulphur dioxide for twenty-four hours by burning 4 pounds of sulphur to each 1,000 cubic feet.

Disinfection of mails.—(1) By formaldehyd gas in a 40 per cent solution, (formalin, formol, or formalose) letters to be placed in closed receptacle, provided with a tight fitting lid, and sprinkling each layer of letters with the solution. The receptacle should then be closed four hours.

(2) By the application of formalin mixed with some inert substance such as sawdust or infusorial earth. This mixture to be sprinkled over the letters in a manner similar to that prescribed in the foregoing. The time of exposure to be not less than four hours.

(3) By application of formaldehyd gas evolved from its solutions, by means of an autoclave, the exposure not to be less than four hours; or the application of formaldehyd by means of a special apparatus provided with means of producing a vacuum. These latter are better adapted where there is a large quantity of mail to be disinfected.

Individual letters can be quickly disinfected by means of a small piece of absorbent paper, moistened with formalin and inserted into the letter.

It is understood that in any of the foregoing methods, letters, etc., should not be put up in packages; newspapers and packages should be opened and spread apart before disinfection.

When it is impracticable to obtain solutions of formaldehyd, mail should be disinfected by exposure to sulphur dioxide in a closed space, made by burning 4 pounds of sulphur to each 1,000 feet of space, the exposure to be not less than twelve hours..

The following extracts are taken from the Interstate Quarantine Regulations, promulgated by the Secretary of the Treasury September 27, 1894, in accordance with the act of Congress approved February 15, 1893:

Interstate quarantine regulations.

ARTICLE I.—QUARANTINABLE DISEASES.

(1) For the purposes of these regulations the quarantinable diseases are cholera (cholerine), yellow fever, smallpox, typhus fever, leprosy, and plague.

ARTICLE II.—NOTIFICATION.

(1) State and municipal health officers should immediately notify the Supervising Surgeon-General of the U. S. Marine-Hospital Service by telegraph or by letter of the existence of any of the above-mentioned quarantinable diseases in their respective states or localities.

ARTICLE III.—GENERAL REGULATIONS.

(1) Persons suffering from a quarantinable disease shall be isolated until no longer capable of transmitting the disease to others. Persons exposed to the infection of a quarantinable disease shall be isolated, under observation, for such a period of time as may be necessary to demonstrate their freedom from the disease.

All articles pertaining to such persons, liable to convey infection, shall be disinfected as hereinafter provided.

(2) The apartments occupied by persons suffering from quarantinable disease, and adjoining apartments when deemed infected, together with articles therein, shall be disinfected upon the termination of the disease.

(3) Communication shall not be held with the above-named persons and apartments, except under the direction of a duly qualified officer.

(4) All cases of quarantinable disease, and all cases suspected of belonging to this class, shall be at once reported by the physician in attendance to the proper authorities.

(5) No common carrier shall accept for transportation any person suffering with a quarantinable disease, nor any infected article of clothing, bedding, or personal property.

The body of any person who has died of a quarantinable disease shall not be transported save in hermetically sealed coffins, and by the order of the State or local health officer.

(6) In the event of the prevalence of smallpox, all persons exposed to the infection, who are not protected by vaccination or a previous attack of the disease, shall be at once vaccinated or isolated for a period of fourteen days.

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ARTICLE V.—DISINFECTION—FOR SMALLPOX.

Apartments infected by smallpox shall be disinfected by one or both of the following methods:

(*a*) Exposure to sulphur dioxide for twenty-four to forty-eight hours.

(*b*) Washing with a solution of bichloride of mercury 1–1000, or a 5 per cent solution of pure carbolic acid.

Clothing, bedding, and articles of furniture exposed to the infection of smallpox shall be disinfected by one or more of the following methods:

(*a*) Exposure to sulphur dioxide for twenty-four to forty-eight hours.

(*b*) Immersion in a solution of bichloride of mercury 1–1000, or 5 per cent solution of pure carbolic acid.

(*c*) Exposure to steam at a temperature of 100 to 102° C. for thirty minutes after such temperature is reached.

(*d*) Boiling for fifteen minutes, the articles to be completely submerged.

[NOTE.—Formaldehyd gas may be used when applicable.]